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Performance Trials of Field Crop Varieties

Charles R. Graves

University of Tennessee Agricultural Experiment Station

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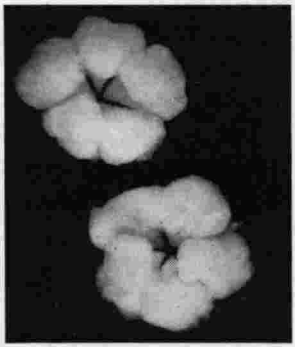
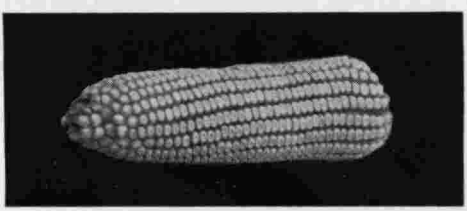
PERFORMANCE TRIALS OF FIELD CROP VARIETIES



BY CHARLES R. GRAVES



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1964
PERFORMANCE TRIALS OF FIELD CROP VARIETIES

CORN — COTTON — OATS — WHEAT — BARLEY — SOYBEANS
ALFALFA — GRAIN SORGHUM — TOBACCO
SUDANGRASS AND SUDANGRASS-SORGHUM HYBRIDS
PEARLMILLETS

Data for 1964 with Summaries of Results from Previous Years

by
Charles R. Graves
Assistant Professor of Agronomy

STATION HATCH PROJECT NO. 33
Evaluation of the Performance of Varieties of Field Crops.

Personnel:
Charles R. Graves, Assistant Professor of Agronomy.

Cooperators:
Joe W. High, Jr., Superintendent, Middle Tennessee Experiment Station, Spring Hill.
J. Hugh Felts, Superintendent, Tobacco Experiment Station, Greeneville.
B. P. Hazlewood, Superintendent, West Tennessee Experiment Station, Jackson.
O. G. Hall, Professor and Head, Department of Agriculture, U. T. Martin Branch, Martin.
J. A. Odom, Superintendent, Plateau Experiment Station, Crossville.
J. N. Odom, Superintendent of Farms, Main Experiment Station, Knoxville.
L. M. Safley, Superintendent, Highland Rim Experiment Station, Springfield.
E. W. Counce, Assistant Professor of Agronomy, U. T. Martin Branch, Martin.
E. N. Duncan, Assistant Professor of Agronomy, (Co-op. USDA), Cotton Field Station, Knoxville.

P. E. Hoskinson, Assistant Professor of Agronomy, Cotton Field Station, Knoxville.

L. J. Hoffbeck, Assistant Professor of Agronomy, (Co-op. USDA), Tobacco Experiment Station, Greeneville.

L. M. Josephson, Professor of Agronomy, (Co-op. USDA), Corn Breeder, Knoxville.

N. E. Justus, Associate Professor of Agronomy, (Co-op. USDA), Cotton Field Station, Knoxville.

H. C. Kincer, Assistant Professor of Agronomy, Knoxville.

D. H. Latham, Associate Professor of Plant Pathology, Springfield.

Joseph R. Overton, Assistant Professor of Agronomy, Jackson.

Smith Worley, Associate Professor of Agronomy, (Co-op. USDA), Knoxville.

Fort Pillow State Farm, Fort Pillow.

Roy Godwin, Rutledge.

Ames Plantation, Grand Junction.

Board of Cotton Examiners, USDA.

RECOMMENDED CROP VARIETIES

(Listed Alphabetically)

Corn Hybrids

White—DeKalb 925, Dixie 29, Dixie 29B, Dixie 29R, Dixie 33, Dixie 77, Funk G-580W, Funk G-795W, P. A. G. 653W, Pioneer 509W, Tenn. 501, Tenn. 503[1], U. S. 523W[1].

Yellow—DeKalb 805, Dixie 22, Embro 222TA, Funk G-710AA, Funk G-711AA, Funk G-144[1], McCurdy 999, Pioneer 309A, Pioneer 309B, Pioneer 310, Tenn. 604.

Cotton

Early—Auburn M, Cobal[1], DeKalb 108, Dixie King II, Empire W. R. 61[1], Rex Smoothleaf, Stardel.

Late—Auburn 56, Carolina Queen, Deltapine Smooth Leaf[1], Stoneville 213, Stoneville 7A[1].

Oats—Fall-Seeded—Blount, Forkedeer.

Wheat—Knox, Knox 62, Monon, Seneca.

Barley—Dayton, Hudson, Kenbar.

Alfalfa—Atlantic, Buffalo, DuPuits[1], Narragansett, Williamsburg.

Soybeans—Dorman, Hill, Hood, Ogden, Lee.

Grain Sorghum—DeKalb E-56A, DeKalb F-63, Frontier 400C, Lindsey 744, McCurdy 70, P.A.G. 515, P.A.G. 430, R.S. 610.

[1]Present plans indicate that these varieties will not be recommended after this year.

Burley Tobacco—Burley 1, Burley 11A, Burley 21, Burley 37, Kentucky 16[1].

Dark Fired Tobacco—Broad Leaf Madole, Black Mammoth, DF-516.

Sudangrass and Sudangrass-Sorghum Hybrids — Asgrow Grazer A, DeKalb Sudax SX-11, Frontier Hi-dan 38, Green Bros. Green Graze, Lindsey 77F, Northrup-King Sordan, Northrup-King Trudan 1, Paymaster Sweet Sioux, Pfister Su-Chow 34, Pfister Su-Chow 35, Piper, Rudy-Patrick Mor-Su, Suhi-1, Taylor-Evans Haygrazer.

Pearmillets — Gahi-1, Starr.

CHARACTERISTICS OF RECOMMENDED VARIETIES (VARIETIES LISTED ALPHABETICALLY)

CORN HYBRIDS

White—Full Season

Variety	Erect plants	Ears/ 100 plants	Grain Quality	Husk cover	Ear ht.	Grain moisture at harvest
	%	No.			In.	%
Dixie 29	89	126	Med.-Good	Good	59	22.4
Dixie 29B	87	137	Med.-Good	Good	62	23.2
Dixie 29R	90	131	Med.-Good	Med.-Good	60	24.0
Dixie 33	86	135	Med.-Good	Good	64	22.2
Dixie 77	87	132	Good	Good	60	22.6
Funk G-580W	87	129	Good	Good	53	20.6
Funk G-795W	83	154	Med.-Good	Good	57	21.9
P.A.G. 653W	85	154	Good-Exc.	Good	57	20.5
Yellow-Full Season						
Dixie 22	85	126	Good	Med.-Good	65	21.9
Embro 222TA	89	105	Good	Med.-Good	63	23.0
Funk G-711AA	86	110	Med.-Good	Med.-Good	59	23.1
Funk G-710AA	93	128	Good	Med.-Good	61	23.9
Pioneer 309B	93	114	Good	Good	53	22.1
White—Medium Season						
DeKalb 925	83	109	Med.-Good	Med.-Good	54	20.5
Pioneer 509W	83	121	Med.-Good	Med.-Good	54	20.9
Tenn. 501	83	133	Good	Med.-Good	53	21.1
Tenn. 503*	93	105	Med.-Good	Med.-Good	52	22.5
U.S. 523W*	—	110	Med.-Good	Med.-Good	—	—
Yellow—Medium Season						
DeKalb 805	87	97	Med.-Good	Fair-Med.	45	17.9
Funk G-144*	90	107	Med.	Med.	46	19.0
McCurdy 999	90	111	Good	Med.-Good	55	21.8
Pioneer 309A	91	110	Med.-Good	Med.-Good	57	22.5
Pioneer 310	90	112	Med.-Good	Med.	50	19.7
Tenn. 604	84	130	Med.-Good	Med.-Good	55	19.7

[1]Present plans indicate that these varieties will not be recommended after this year.

Auburn M—A very early-maturing medium to large-boll variety which has a lint percentage of about 36 to 38. Fiber properties: Fair (UHM) length with average strength and fineness. Resistant to fusarium wilt.

Auburn 56—A late, medium-boll variety with a lint percentage of about 36 to 38. Fiber properties: Average (UHM) length with good strength and fineness. Plant type variable. Resistant to fusarium wilt and has tolerance to verticillium wilt. Auburn 56 has a high degree of storm resistance.

Carolina Queen—A late, medium-boll variety with a lint percentage of about 36 to 39. Fiber properties are good. Resistant to fusarium wilt. Tall growth habit.

Cobal[1]—A very early large-boll variety that is easy to hand pick. Lint percentage is about 35 to 37. Cobal has good fiber properties.

DeKalb 108—A strain - cross, medium-early variety that has medium to large bolls. Lint percentage 35 to 37. Good (UHM) length, fineness, and average strength. Resistant to fusarium wilt.

Deltapine Smooth Leaf[1]—A late small-boll variety with a lint percentage of 37 to 39. Good fiber properties. It has been observed to have less seedling vigor than some of the other recommended varieties.

Dixie King II—A medium-early variety that has large bolls. Lint percentage 35 to 37. Good (UHM) length, fineness, and medium strength. Tolerant to fusarium wilt.

Empire W.R. 61[1]—An early, large-boll variety with a lint percentage of about 35 to 37. The strength and length (UHM) have been average and the lint somewhat fine under Tennessee conditions. Resistant to fusarium wilt.

Rex Smoothleaf—An early, large-boll variety with a lint percentage of about 35 to 37. Fiber properties: Medium (UHM) length, and fair strength and fineness. Resistant to fusarium wilt and one strain of Bacterial blight.

Stardel—An early, small-boll variety with a lint percentage of about 36 to 38. Fiber properties: Medium (UHM) length, and good strength and fineness.

[1]Present plans indicate that these varieties will not be recommended after this year.

Stoneville 213—A medium-late, small-boll variety with a lint percentage of 36 to 39. Fiber properties: Fair (UHM) length, and good strength and fineness.

Stoneville 7A[1]—A late, small-boll variety with a lint percentage of 37 to 39. Fiber properties: Good (UHM) length, and fineness and fair strength.

Oats

Fall-Seeded:

Blount—A short, stiff-strawed variety slightly less winter-hardy than Forkedeer. Less lodging than LeConte and about equal in winter hardiness. Similar to LeConte in vegetative growth and appearance except that the panicle is slightly longer and more spreading. Has out-yielded most other varieties over a 5-year period. Maturity date falls between LeConte and Forkedeer. Due to its lodging resistance, Blount is suited to relatively-high levels of fertility.

Forkedeer—A very winter-hardy variety with yellow grain. Has a tendency to lodge under conditions of high fertility. Medium tall; matures a few days later than Victorgrain 48-93. Susceptible to crown rust.

Wheat

Knox—A very early winter-hardy, white chaffed, variety with medium short straw. Semi-upright type with fair to poor standing ability. Due to its earliness Knox may escape serious damage by stem rust. It is resistant to some races of leaf rust in the mature plant stage.

Knox 62—Similar to Knox except that it is Hessian fly resistant.

Monon—A very early winter-hardy, white chaffed, variety with moderate stiff straw which is a few inches shorter than Knox. Monon has a head type similar to Knox but has shorter tip awns. The variety is resistant to Hessian fly and is resistant to certain races of leaf rust in the mature plant stage. It is susceptible to stem rust but may escape serious damage from this disease due to its earliness.

Seneca—A red-chaffed variety of medium height and fair

[1]Present plans indicate that these varieties will not be recommended after this year.

standing ability. Susceptible to leaf and stem rust. Matures later than Knox or Monon. Not recommended for west Tennessee.

Barley

Dayton—A winter-hardy, semi-rough-awned, early variety with good standing ability. Medium tall; one of the highest yielders in the state variety test. Susceptible to mildew and scald.

Hudson—A winter-hardy, rough-awned variety with fair standing ability. It is 2 to 3 days earlier than Holston. Good resistance to mildew and scald.

Kenbar—A winter-hardy variety of medium height. About the same maturity as Dayton. Yields slightly less than Dayton. Good resistance to mildew and fair resistance to scald.

Alfalfa

Atlantic—A variegated variety developed from selections having a wide genetic background. It has yielded well all over the state. Atlantic is somewhat tolerant but not resistant to bacterial wilt.

Buffalo—Selected out of an old Kansas common strain that is resistant to bacterial wilt. Buffalo is well adapted to Tennessee conditions and is one of the leading varieties sold in the state.

DuPuits[1]—A variety that has great eye appeal because of the tall growth and fast recovery after clipping. It matures faster and should be cut earlier than other recommended varieties. DuPuits is stemmier and not as long-lived as other recommended varieties.

Narragansett—A synthetic variety of very diverse origin. It recovers somewhat slower than other adapted varieties after cutting. Narragansett is fine-stemmed and yields as well as Atlantic. This variety has been the top yielder at the Plateau Experiment Station, Crossville. Seed is in short supply in Tennessee.

Williamsburg—Developed from selections out of Kansas Common. It is susceptible to bacterial wilt. This variety has been a good producer and is well adapted over the state.

[1]Present plans indicate that these varieties will not be recommended after this year.

Soybeans

Dorman—A variety having large yellow beans with a buff-colored hilum. Matures approximately 16 days earlier than Ogden. Dorman holds its seed very well, but not as well as Lee. It has good seed quality, and oil content similar to Ogden. The plants have heavy foliage, with leaves being very large when compared with other varieties.

Lee—Matures approximately 1 week later than Ogden and resembles Ogden in general growth characteristics. Lee has tawny pubescence and purple flowers, whereas Ogden has gray pubescence and purple flowers. Lee has more resistance to shattering than the other recommended varieties. Lee is reported to be resistant to the diseases bacterial pustule, wildfire, frogeye, and purple seed stain. Also it is supposed to be moderately resistant to target spot. The seed are yellow with a black hilum. Lee has a tendency to lodge under some conditions.

Hill—Hill matures about 2 days earlier than Dorman. This variety has more resistance to the major foliage diseases, lodging, and shattering than Dorman, but is not quite as resistant to shattering as Lee.

Hood—Hood matures about 10 days earlier than Lee. It is supposed to have resistance to bacterial pustule, wildfire, frogeye, and target leaf spot diseases. The seed are yellow with a buff hilum.

Ogden—This variety was developed by The University of Tennessee Agricultural Experiment Station and is widely grown in the Southeastern states. It produces high yields of seed with a good oil content. Ogden has a tendency to shatter and should be harvested shortly after maturity. It is a mid-season variety with about the same maturity as Hood. Ogden has olive-colored beans with a brownish-black hilum.

Burley Tobacco

Burley 1—An upright-leaf type variety which produces good yields of excellent quality tobacco. It has good resistance to black root rot, but does not have any resistance to other major tobacco diseases. This variety performs best when topped early and kept suckered.

Burley 11-A—A brittle, drooping leaf variety which has good

resistance to black shank, black root rot, and fusarium wilt. This variety will not yield as well as Burley 37, but has a little more resistance to black root rot and fusarium wilt. Burley 11-A is early-maturing and is often ready to harvest 1 week earlier than other varieties.

Burley 21—A very upright-leaf type variety which produces good yields of fine quality tobacco. It has excellent resistance to wildfire and mosaic and fair resistance to black root rot. Plants are more vigorous and grow off faster in plant beds than most other varieties. Burley 21 is the most widely grown variety in the State.

Burley 37—An upright-leaf type variety which has good resistance to black shank, excellent resistance to wildfire, and fair resistance to black root rot and fusarium wilt. This variety is recommended on farms where black shank is present. In the absence of black shank, Burley 37 will not yield as well as Burley 21, but is comparable in quality.

Kentucky 16[1]—A semi-upright-leaf type variety which has fair resistance to black root rot, but does not have any resistance to other major tobacco diseases. In the absence of diseases it produced good yields of quality tobacco.

Grain Sorghum Hybrids

DeKalb E-56A[1]—A few days later than Martin Milo. The hybrid has deep red seed on large open heads. Good standing ability.

DeKalb F-63—A variety of medium plant height, maturity, and head compactness.

Frontier 400C—A variety of medium maturity with heads tight in compactness.

Lindsey 744—A variety of early maturity with a medium to tight head in compactness.

McCurdy 70—A variety of medium maturity, red seed on heads of tight compactness.

P.A.G. 515—A variety of late maturity with heads of tight compactness.

[1]Present plans indicate that these varieties will not be recommended after this year.

P.A.G. 430—A variety of early maturity with heads of medium compactness.

R. S. 610—A medium-maturing hybrid with heads tight in compactness.

Dark Fire-Cured Tobacco

Broad Leaf Madole—A relatively high-yielding, high-acre-value variety. Susceptible to mosaic and wildfire.

Black Mammoth—Black mammoth produces a leaf somewhat darker and broader than Madole. Usually it does not droop quite as much as Madole. Susceptible to mosaic and wildfire.

DF-516—A broad-leaved, open-growing, dark-green tobacco that is resistant to both mosaic and wildfire. Because of the large, broad leaves, this variety is perhaps best suited to the production of cutting and wrapping tobacco. The leaf spacing of DF-516 is about the same as that of Madole.

Sudangrass and Sudangrass-Sorghum Hybrids—Pearlmillets

For a description of some of the recommended varieties see The University of Tennessee, Agricultural Experiment Station, Bulletin 373.

PERFORMANCE TRIALS
OF
CORN — COTTON — OATS — WHEAT — BARLEY
SOYBEANS — ALFALFA — GRAIN
SORGHUM — TOBACCO
SUDANGRASS AND SUDANGRASS-SORGHUM HYBRIDS
PEARLMILLETS

Data for 1964 with summaries of results from previous years

INTRODUCTION

The purpose of the project, "Evaluation of the Performance of varieties of Field Crops," is to test field crop varieties available to farmers of this and neighboring states, as well as the best experimental varieties being developed by experiment stations and other agencies.

The tests were conducted using field plot designs, fertility levels and experimental techniques that have been found suitable for each crop.

Committees composed of specialists from the research, resident instruction, and extension staffs of the University of Tennessee College of Agriculture study the performance data and determine varieties to be recommended.

In order for a variety to be recommended, it must yield well and have other characteristics suitable for Tennessee conditions.

PRESENTATION OF DATA

The tests were conducted in each of the principal agricultural regions of the State where the specific crop is grown. Plots of each variety were replicated several times at each location. Locations of field tests are given in each table of data. An average of the performance of a variety across the area of adaptation and over a period of years is the best basis for evaluation.

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first.

The least significant difference (L.S.D.) values at the 5% level for the 1964 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V.%) are shown at bottom of each table. At each location where tests were conducted in 1964, the soil types are reported at the end of the table.

CORN

The 1964 full-season corn variety tests were conducted at 4 locations and the early-maturing tests were conducted at 7 locations. There were 28 entries in the full-season test and 40 in the early-maturing test. The experimental design used was a randomized complete block with 6 replications.

Symptoms of a virus disease resembling those of corn stunt occurred at Knoxville, Fort Pillow, and in a non-replicated planting in Hardin Co. The percentage of diseased plants in these locations is shown in tables 9 and 10. It should be pointed out that these

are 1-year data only, and there is no assurance that hybrids having none or low percentage of diseased plants are resistant.

Dixie 29 and Pioneer 309A were included in both the full-season and the early-maturing tests to provide some measure of relative performance of the two groups.

Amounts of fertilizer applied to each test were considered sufficient for corn to yield over 100 bushels per acre. All tests were planted at the rate of 28,000 plants per acre and thinned to give a stand of 14,000 plants.

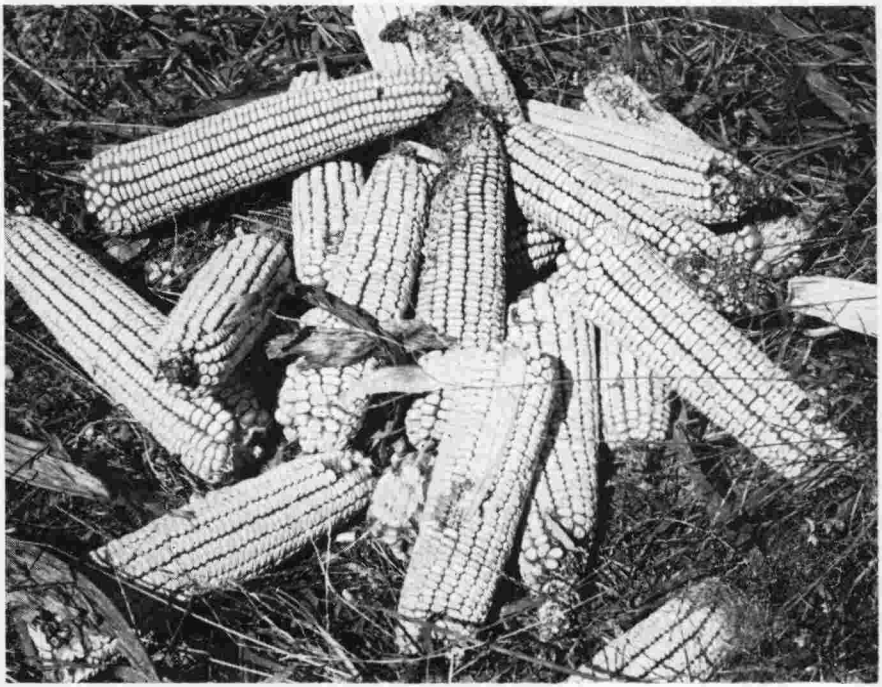

Figure 1. Corn variety test, Knoxville, October 15, 1964. An example of poor quality corn. Note the damaged tips which were probably caused by poor husk cover.

The "State average yields" and characteristics of the hybrids tested in the early maturing group are presented in Table 2. "Erectness of plants" is a measure of a variety's resistance or susceptibility to lodging. The higher the number, the better the standing ability of the hybrid. In 1964 very little lodging was noted at most locations due to early harvest dates and dry fall. "Ears/100 plants" is a measure of the prolificacy of a variety. Single-eared

hybrids will have a rating of about 100, whereas prolific hybrids under good weather conditions at about 14,000 plants per acre usually will have a rating of 120 to 150.

"Grain quality" and "Husk cover" are ratings taken at the time of harvest. Usually corn that has a good husk cover will have good grain quality. "Ear height" is a measure of the average distance from the ground to the ears.

"Grain moisture" is used to calculate yield (yields are expressed in bushels per acre, adjusted to 15.5% moisture), and measures relative maturity of the hybrids. A high moisture at harvest indicates a later-maturing variety and a low moisture indicates an earlier-maturing hybrid.

Data are presented in tables 1 through 10.

Table 1. Corn: Yields of 40 early-maturing hybrids tested at seven locations in 1964

Color	Hybrid	State avg.	Greeneville[1]	Knoxville[2]	Crossville[3]	Jackson[4]	Spring Hill[5]	Springfield[6]	Martin[7]
						Bushels per acre			
Y SX	P.A.G. SX-59	102	98	106	102	84	119	101	102
W	Dixie 29[8]	98	92	103	105	84	113	99	92
W SX	Stull's 800W SX	98	108	106	84	85	115	91	96
Y SX	P.A.G. SX-29	97	101	100	92	90	104	96	94
Y	Pioneer 310	96	97	101	106	86	106	89	89
W SX	Meacham's MX-50W	96	99	104	98	86	105	98	84
Y	Funk G-4703	96	85	102	98	84	114	96	91
W	Tenn. 501	95	94	99	101	83	108	92	90
Y SX	McCurdy 7X11	95	84	98	100	84	110	93	95
W	Princeton 990-A	95	91	112	92	85	109	88	86
Y	Watson 401A	94	92	100	102	76	112	93	86
Y	McCurdy 999	92	84	110	95	88	96	89	83
W	Stull's 400WA	92	79	103	99	79	108	104	72
W	P.A.G. 633	92	80	97	105	84	105	94	77
W	Pioneer 509W	92	92	98	85	87	105	90	86
Y	Pioneer 309A[8]	91	83	99	99	91	100	90	74
Y SX	Stull's 807YSX	90	80	85	107	79	99	96	87
Y	Tenn. 604	89	80	96	91	82	101	92	82
Y SX	McCurdy 972X7	89	74	95	88	85	110	90	80
Y	Stull's 101YA	89	74	88	88	80	106	93	91
Y	Embro Jarvis E	88	89	101	81	72	101	97	75
Y SX	DeKalb 805	88	72	88	102	81	91	99	81
Y	V.P.I. 646	87	75	92	96	79	101	89	80
W	DeKalb 925	87	77	76	94	84	105	96	77

Table 1.—(Continued)

Color	Hybrid	State avg.	Greene-ville[1]	Knox-ville[2]	Cross-ville[3]	Jack-son[4]	Spring Hill[5]	Spring-field[6]	Martin[7]
						Bushels per acre			
Y	Embro 49BR	87	76	97	101	76	92	86	80
Y	Princeton 8-X	84	69	86	103	73	94	86	79
Y	Funk's G-144	84	66	94	84	80	92	84	89
Y SX	Meacham's MX-30Y	84	68	87	96	69	91	94	80
W	Tenn. 503	83	72	79	92	73	96	93	73
Y	Asgrow 100	81	70	90	82	69	97	76	84
Y SX	Princeton SX-800	81	66	81	96	73	94	81	76
Y	Horn's HS 118A	80	70	82	95	71	84	85	77
Y	DeKalb 822	78	58	85	87	71	89	80	75
Y	V.P.I. 648	77	62	74	95	66	95	80	66
Y	Horn's HS 654	76	61	81	80	63	84	86	73
Y	Horn's HS 650	74	61	78	85	68	77	78	68
Experimentals:									
W	T1112	101	99	108	101	92	124	104	77
W	T1105	100	96	103	101	87	127	105	83
W	T1118	100	91	107	120	93	113	94	78
Y	T0044B	99	86	96	103	90	112	107	98
	L.S.D. (.05)	—	11.2	11.1	13.0	11.7	12.5	12.3	12.1
	C.V. %	—	12.2	10.4	12.0	12.9	10.8	11.9	13.0

[1]Cumberland silt loam, (2% to 5% slopes, Hermitage silt loam, (2% to 5% slopes, and Waynesboro loam, (2% to 5% slopes).
[2]Sequatchie silt loam, (0% to 2% slopes).
[3]Hartsells loam, eroded, (2% to 5% clopes).
[4]Loring silt loam, (2% to 5% slopes).
[5]Maury silt loam, (2% to 5% slopes).
[6]Ennis silt loam, (0% to 2% slopes).
[7]Collins silt loam, (0% to 2% slopes).
[8]Also included in test of full-season hybrids.
SX—Denotes a single cross or special cross hybrid.

Table 2. Corn: Characteristics of 40 early-maturing hybrids tested at seven locations in 1964

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
Y SX	P.A.G. SX-59	102	95	105	Med.-Good	Fair-Med.	48	23.0
W	Dixie 29*	98	80	130	Med.	Good	52	26.2
W SX	Stull's 800W SX	98	90	105	Good	Good	49	24.6
Y SX	P.A.G. SX-29	97	95	100	Fair-Med.	Fair-Med.	47	19.4
Y	Pioneer 310	96	90	115	Med.-Good	Med.-Good	46	21.1
W SX	Meacham's MX-50W	96	90	110	Good	Good	48	24.5
Y	Funk G-4703	96	95	100	Med.-Good	Fair-Med.	46	21.6
W	Tenn. 501	95	85	130	Med.-Good	Med.-Good	51	22.5
Y SX	McCurdy 7X11	95	95	100	Med.-Good	Fair	47	21.5
W	Princeton 990-A	95	95	100	Med.	Med.-Good	48	21.9
Y	Watson 401A	94	95	105	Med.-Good	Med.	47	23.6
Y	McCurdy 999	92	90	110	Good	Med.-Good	52	23.0
W	Stull's 400WA	92	80	105	Med.-Good	Good	52	22.6
W	P.A.G. 633	92	85	130	Med.-Good	Good	51	22.8
W	Pioneer 509W	92	85	120	Med.	Med.-Good	50	23.1
Y	Pioneer 309A*	91	95	105	Med.-Good	Good	52	24.6
Y SX	Stull's 807YSX	90	90	95	Med.	Fair	47	20.0
Y	Tenn. 604	89	85	120	Med.-Good	Med.-Good	52	21.8
Y SX	McCurdy 972X7	89	85	100	Med.-Good	Med.	50	20.8
Y	Stull's 101YA	89	90	100	Med.-Good	Med.-Good	49	21.6
Y	Embro Jarvis E	88	95	115	Good	Good	46	25.6
Y SX	DeKalb 805	88	90	95	Med.-Good	Fair-Med.	43	18.5
Y	V.P.I. 646	87	95	95	Med.	Fair-Med.	48	21.8
W	DeKalb 925	87	85	105	Med.	Med.-Good	47	21.8

Table 2.—(Continued)

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
Y	Embro 49BR	87	95	115	Good	Good	44	24.2
Y	Princeton 8-X	84	95	100	Fair-Med.	Fair	46	20.0
Y	Funk's G-144	84	95	105	Med.	Med.	43	21.1
Y SX	Meacham's MX-30Y	84	90	95	Med.	Fair-Med.	43	20.6
W	Tenn. 503	83	95	100	Med.-Good	Med.-Good	48	24.6
Y	Asgrow 100	81	90	100	Med.	Fair-Med.	42	19.8
Y SX	Princeton SX-800	81	95	100	Fair-Med.	Fair-Med.	42	19.1
Y	Horn's HS 118A	80	90	100	Fair-Med.	Fair-Med.	47	20.2
Y	DeKalb 822	78	95	105	Fair-Med.	Fair	44	20.3
Y	V.P.I. 648	77	95	95	Fair-Med.	Fair	45	21.4
Y	Horn's HS 654	76	90	100	Fair	Fair	42	19.0
Y	Horn's HS 650	74	95	100	Fair	Poor-Fair	40	18.5
Experimentals:								
W	T1112	101	90	160	Med.-Good	Good	57	23.7
W	T1105	100	85	145	Med.-Good	Good	54	23.5
W	T1118	100	85	150	Med.	Med.-Good	57	23.5
Y	T0044B	99	90	125	Med.-Good	Med.	49	22.9

* Also included in test of full-season hybrids.

SX—Denotes a single cross or a special cross hybrid.

Table 3. Corn: Yield and other characteristics of early-maturing hybrids tested for 2 or 3 years

Color	Variety	3 Yr. avg. 1962-1964	2 Yr. avg. 1963-1964	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Dixie 29*	107	108	85	139	Med-Good	Good	59	24.0
Y	Pioneer 310	104	106	90	112	Med.-Good	Med.	50	19.7
W	P.A.G. 633	103	105	83	132	Good	Good	55	21.2
W	Tenn. 501	102	104	83	133	Good	Med.-Good	53	21.1
W	Pioneer 509W	101	102	83	121	Med.-Good	Med.-Good	54	20.9
Y	Tenn. 604	100	101	84	130	Med.-Good	Med.-Good	55	19.7
Y SX	DeKalb 805	99	99	87	97	Med.-Good	Fair-Med.	45	17.9
Y	Pioneer 309A*	97	99	91	110	Med.-Good	Med.-Good	57	22.5
W	Dekalb 925	97	97	83	109	Med.-Good	Med.-Good	54	20.5
Y	Funk G-144	93	95	90	107	Med.	Med.	46	19.0
W	Tenn. 503	92	94	93	105	Med.-Good	Med.-Good	52	22.5
Y SX	P.A.G. SX59	—	109	92	104	Good	Fair-Med.	50	21.8
W SX	Meacham's MX-50W	—	107	88	110	Good	Med.-Good	53	23.6
Y SX	McCurdy 7X11	—	104	92	100	Med.-Good	Fair	49	19.8
W	Princeton 990-A	—	104	86	100	Med.	Med.	52	21.4
Y SX	P.A.G. SX29	—	104	92	107	Fair-Med.	Fair	50	18.6
W	Stull's 400WA	—	102	80	104	Med.-Good	Med.-Good	54	21.8
Y SX	McCurdy 972X7	—	102	88	103	Good	Med.	54	19.6
Y	Embro Jarvis E	—	102	90	122	Good	Good	51	24.2
Y SX	Stull's 807SX	—	101	86	98	Med.-Good	Fair-Med.	50	19.4
Y	Stull's 101YA	—	100	86	103	Med.-Good	Med.	51	20.4
Y	McCurdy 999	—	98	90	111	Good	Med.-Good	55	21.8
Y	Embro 49BR	—	97	90	116	Good	Med.-Good	48	22.8
Experimentals:									
W	T1118	110	112	86	152	Med.-Good	Med.-Good	61	20.6
W	T1112	109	112	86	162	Good	Good	59	21.1
W	T1105	106	109	85	151	Good	Good	58	21.2
Y	T0044B	—	105	88	132	Med.-Good	Med.	52	21.8

* Also included in test of full-season hybrids.

SX—Denotes a single cross or a speical cross hybrid.

Table 4. Corn: Yields of 14 early-maturing hybrids tested at each of seven locations for 2 or 3 years

Color	Hybrid	Greene-ville 1962-64	Knox-ville 1962 & 64	Cross-ville 1962-64	Jack-son 1962-64	Spring Hill 1962-64	Spring-field 1962-64	Martin 1962-64
				Bushels per acre				
W	Dixie 29*	124	103	104	87	112	117	100
Y	Pioneer 310	119	98	103	85	107	117	91
W	P.A.G. 633	114	91	93	93	107	117	94
W	Tenn. 501	114	94	101	86	109	115	99
W	Pioneer 509W	115	94	94	87	105	112	96
Y	Tenn. 604	112	92	96	86	100	116	88
Y SX	DeKalb 805	104	91	104	85	96	116	89
Y	Pioneer 309A*	105	94	98	86	100	110	85
W	DeKalb 925	108	84	90	84	103	116	86
Y	Funk G-144	97	87	90	79	96	104	91
W	Tenn. 503	103	83	94	77	94	108	79
Experimentals:								
W	T1118	122	104	109	90	114	129	96
W	T1112	126	104	97	87	116	129	96
W	T1105	124	101	96	84	115	126	94

* Also included in test of full-season hybrids.
SX—Denotes a single cross or a special cross hybrid.

Table 5. Corn: Yields of 28 full-season hybrids tested at four locations in 1964

Color	Hybrid	State avg.	Knoxville[1]	Fort Pillow[2]	Jackson[3]	Spring Hill[4]
			Bushels per acre			
W	Pioneer 511	106	122	92	85	123
Y	McCurdy M-97	104	108	96	96	116
W	Dixie 29B	102	96	98	83	131
W	Dixie 77	101	109	98	77	118
W	Dixie 29[5]	100	110	89	86	115
W	Dixie 29R	100	104	94	87	113
Y	DeKalb 1006	99	97	98	91	109
W	Funk G-580W	98	109	91	80	112
W	P.A.G. 653W	98	106	88	87	111
Y	Funk G-710AA	98	113	86	84	108
W	Dixie 33	96	100	90	88	106
Y	Dixie 22	96	109	83	82	108
W	DeKalb XL-390	96	105	75	91	112
Y	Pioneer 309B	95	107	78	88	107
W	Funk G-795W	95	106	87	77	110
Y	Embro 222TA	94	101	84	84	107
Y	Funk G-711AA	93	97	89	82	105
Y	Pioneer 3048	93	109	77	78	106
W	McCurdy 951W	93	100	81	83	107
Y	Pioneer X8240	92	112	65	83	110
Y	Asgrow 302	90	93	81	82	102
Y	Pioneer 309A[5]	89	102	70	81	103
Y	DeKalb 1055	89	106	74	67	108
W	Embro Departure X	84	83	82	76	97
	Experimentals:					
W	T2108	104	108	102	82	124
W	T3106	102	116	89	90	113
Y	T2104	97	102	100	74	112
Y	T3018	95	97	84	84	115
	L.S.D. (.05)	—	11.2	13.4	11.1	13.0
	C.V.	—	9.4	13.7	11.8	10.3

[1]Sequatchie silt loam, (0% to 2% slopes).
[2]Collins silt loam, (2% to 5% slopes).
[3]Loring silt loam, (2% to 5% slopes).
[4]Maury silt loam, (2% to 5% slopes).
[5]Also included in test of early-maturing hybrids.

Table 6. Corn: Characteristics of 28 full-season hybrids tested at four locations in 1964

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	%	No.			In.	%
W	Pioneer 511	106	90	150	Med.-Good	Good	51	23.0
Y	McCurdy M-97	104	90	115	Med.-Good	Med.	59	19.7
W	Dixie 29B	102	80	150	Med.-Good	Good	57	24.4
W	Dixie 77	101	75	155	Med.-Good	Good	57	25.0
W	Dixie 29*	100	85	140	Med.	Good	55	24.2
W	Dixie 29R	100	85	140	Med.-Good	Med.-Good	55	26.0
Y	DeKalb 1006	99	95	115	Good	Med.-Good	60	22.2
W	Funk G-580W	98	80	135	Med.-Good	Good	50	22.6
W	P.A.G. 653W	98	80	180	Good	Good-Exc.	55	22.6
Y	Funk G-710AA	98	90	145	Good	Med.	59	27.3
W	Dixie 33	96	80	150	Med.	Med.-Good	61	24.5
Y	Dixie 22	96	85	140	Med.-Good	Good	63	24.0
W	DeKalb XL-390	96	85	115	Good-Exc.	Med.-Good	51	21.9
Y	Pioneer 309B	95	95	120	Good	Good	50	24.5
W	Funk G-795W	95	70	165	Med.	Good	55	23.5
Y	Embro 222TA	94	90	115	Med.-Good	Med.-Good	60	26.0
Y	Funk G-711AA	93	85	125	Med.-Good	Med.-Good	57	25.7
Y	Pioneer 3048	93	95	115	Med.-Good	Good	59	28.0
W	McCurdy 951W	93	80	135	Good	Good-Exc.	55	27.0
Y	Pioneer X8240	92	90	130	Good	Good-Exc.	50	23.6
Y	Asgrow 302	90	90	110	Med.	Med.-Good	50	21.0
Y	Pioneer 309A*	89	90	110	Med.-Good	Med.-Good	53	24.0
Y	DeKalb 1055	89	85	145	Good	Good-Exc.	56	26.8
W	Embro Departure X	84	55	235	Fair-Med.	Good-Exc.	57	20.8
Experimentals:								
W	T2108	104	80	155	Med.	Med.-Good	56	26.2
W	T3106	102	85	145	Good	Good	53	23.2
W	T2104	97	80	160	Med.-Good	Good	57	24.6
Y	T3018	95	70	160	Med.	Good	54	22.2

*Also included in test of early-maturing hybrids.

Table 7. Corn: Yield and other characteristics of full-season hybrids tested for 2 or 3 years

Color	Hybrid	3 Yr. avg. 1962-1964	2 Yr. avg. 1963-1964	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Funk G-795W	94	98	83	154	Med.-Good	Good	57	21.9
W	Dixie 33	92	98	86	135	Med.-Good	Good	64	22.2
W	P.A.G. 653W	92	96	85	154	Good-Exc.	Good	57	20.5
W	Funk G-580W	91	94	87	129	Good	Good	53	20.6
W	Dixie 77	91	94	87	132	Good	Good	60	22.6
W	Dixie 29*	90	95	89	126	Med.-Good	Good	59	22.4
Y	Funk G-710AA	90	94	93	128	Good	Med.-Good	61	23.9
Y	Pioneer 309B	90	92	93	114	Good	Good	53	22.1
Y	Dixie 22	88	92	85	126	Good	Med.-Good	65	21.9
Y	Embro 222TA	88	92	89	105	Good	Med.-Good	63	23.0
Y	Funk G-711AA	85	89	86	110	Med.-Good	Med.-Good	59	23.1
Y	Pioneer 309A*	83	86	91	103	Good	Med.-Good	55	21.4
W	Dixie 29R	—	100	90	131	Med.-Good	Med.-Good	60	24.0
Y	McCurdy M-97	—	100	92	112	Med.-Good	Fair-Med.	60	19.2
W	Dixie 29B	—	97	87	137	Med.-Good	Good	62	23.2
Y	DeKalb 1006	—	96	94	108	Good-Exc.	Med.-Good	60	21.3
Y	Pioneer 3048	—	92	96	113	Med.-Good	Good	62	24.6
W	McCurdy 951W	—	89	87	130	Good	Good-Exc.	60	24.4
Experimental:									
W	T2108	—	101	89	148	Med.-Good	Med.-Good	60	23.5

*Also included in test of early-maturing hybrids.

Table 8. Corn: Yields of 12 full-season hybrids tested at four locations for 2 or 3 years

Color	Hybrid	Knoxville 1962 & '64	Fort Pillow 1962-64	Jackson 1962-64	Spring Hill 1962-64
			Bushels per acre		
W	Funk G-795W	103	72	88	111
W	Dixie 33	98	72	90	110
W	P.A.G. 653W	103	70	89	110
W	Funk G-580W	105	70	84	109
W	Dixie 77	102	75	80	110
W	Dixie 29*	99	71	84	111
Y	Funk G-710AA	100	70	88	104
Y	Pioneer 309B	103	70	86	104
Y	Dixie 22	99	66	82	109
Y	Embro 222TA	92	68	88	103
Y	Funk G-711AA	93	68	80	103
Y	Pioneer 309A*	97	61	80	101

*Also included in test of early-maturing hybrids.

Table 9. Corn: Percentages of plants showing virus disease symptoms similar to those described for corn stunt at 3 locations in 1964

Full-season hybrids

Color	Variety	Knoxville	Fort Pillow[1]	Hardin Co.[2]
		%	%	%
W	Pioneer 511	2.5	31.0	4.5
Y	McCurdy M-97	17.5	13.0	38.6
W	Dixie 29B	0.0	18.0	2.4
W	Dixie 77	2.5	15.0	5.4
W	Dixie 29	2.5	23.0	8.3
W	Dixie 29R	7.5	18.0	25.6
Y	DeKalb 1006	5.0	17.0	28.6
W	Funk G-580W	0.0	31.0	2.3
W	P.A.G. 653W	5.0	42.0	14.3
Y	Funk G-710AA	3.7	24.0	0.0
W	Dixie 33	5.0	24.0	38.6
Y	Dixie 22	0.0	28.0	13.9
W	DeKalb XL-390	26.2	87.0	65.0
Y	Pioneer 309B	20.0	54.0	28.9
W	Funk G-795W	0.0	23.0	5.9
Y	Embro 222TA	0.0	15.0	11.9
Y	Funk G-711AA	2.5	19.0	2.3
Y	Pioneer 3048	7.5	23.0	10.5
W	McCurdy 951W	5.0	30.0	30.6
Y	Pioneer X8240	22.5	45.0	33.3
Y	Asgrow 302	5.0	31.0	44.7
Y	Pioneer 309A	5.0	33.0	34.8
Y	DeKalb 1055	20.0	32.0	18.6
W	Embro Departure X	17.5	39.0	32.5
Experimentals:				
W	T2108	2.5	10.0	0.0
W	T3106	1.2	43.0	0.0
W	T2104	12.5	21.0	41.5
Y	T3018	6.2	17.0	2.5

[1]Percentage included plants showing some degree of stunting without coloration in the leaves.
[2]Data furnished by L. M. Josephson, Professor of Agronomy (cooperative with USDA)

Table 10. Corn: [1]Percentage of plants showing virus disease symptoms similar to those described for corn stunt at one location, Hardin Co., in 1964.
Early maturing hybrids

Color	Variety	Plants affected	Color	Variety	Plants affected	Color	Variety	Plants affected
		%			%			%
W	Dixie 29	13.0	Y	P.A.G. SX-29	7.0	Y	Stull's 101YA	67.5
W	Tenn. 501	13.0	Y	P.A.G. SX-59	13.0	W	Stull's 400WA	35.0
W	Tenn. 503	52.4	Y	Pioneer 309A	4.9	Y	Stull's 807Y SX	67.5
Y	Tenn. 604	21.3	Y	Pioneer 310	40.0	W	Stull's 800 W SX	12.0
Y	T0044 B	17.0	W	Pioneer 509W	4.8	Y	Meacham's MX30Y	92.3
W	T1105	12.2	Y	McCurdy 999	16.3	W	Meacham's MX50W	43.7
W	T1112	13.9	Y	McCurdy 972X7	43.3	Y	Embro Jarvis E	22.8
W	T1118	4.3	Y	McCurdy 7X11	44.8			
Y	Funk's G-144	53.3	W	Princeton 990A	14.6			
Y	Funk's G-4703	52.4	Y	Princeton 8-X	78.0	Y	Embro 49BR	24.3
Y	DeKalb 805	72.2	Y	Princeton SX-800	89.7	Y	Asgrow 100	77.8
Y	DeKalb 822	43.9	Y	Horn's HS 650	88.2	Y	Watson 401A	53.8
W	DeKalb 925	52.4	Y	Horn's HS 654	67.6	Y	V.P.I. 646	41.2
W	P.A.G. 633	2.8	Y	Horn's HS 118A	70.0	Y	V.P.I. 648	51.2

[1]Data furnished by L. M. Josephson, Professor of Agronomy (Cooperative with USDA).

COTTON

The 1964 cotton variety tests were conducted in cooperation with the U. S. Department of Agriculture at Knoxville, Jackson, Ames Plantation, and Fort Pillow. Each test consisted of 21 entries in a randomized complete block design with 8 replications. Plots were 2 rows 35 feet long.

Two 160 boll samples (20 bolls at random from each replication) were taken from each variety before first picking. These samples were used to obtain Gin, Seed, and Fiber data. Yield and other characteristics of the varieties are presented in tables 11 through 20. Bolls per pound is used to indicate the size of the cotton

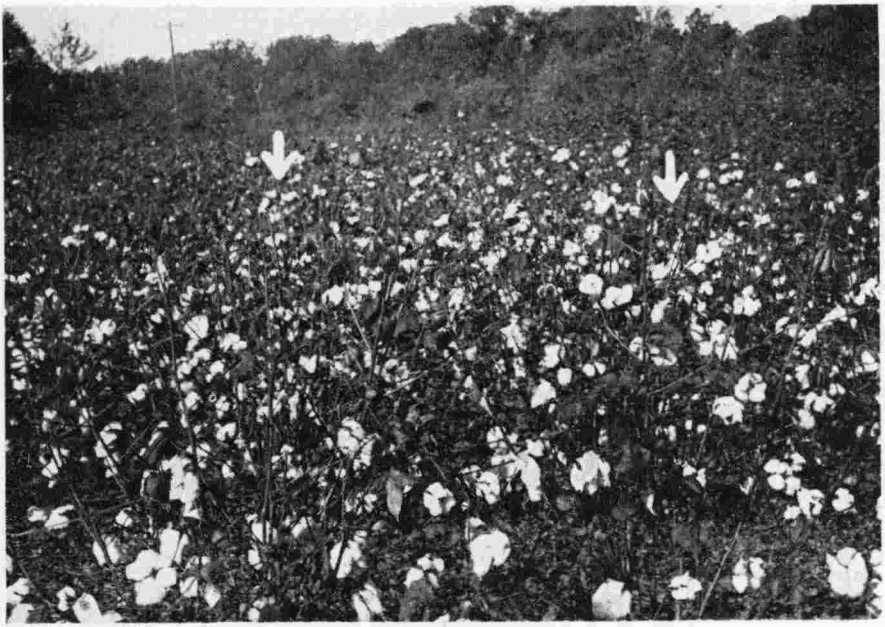

Figure 2. A photo of two early-maturing cotton varieties: left, Auburn M; right, T-56-210. Ames Plantation, October 7, 1964.

bolls. The higher the number the smaller the bolls, and conversely the lower the number the larger the bolls. Percent total yield at first picking is used to indicate the earliness of the cotton variety. A high percent of cotton harvested at first picking indicates an early variety and a low percent indicates a late variety. The upper half mean length, micronaire fineness reading, and fiber strength (T_1) are presented in tables 15 through 20. Upper half mean

length is measured on the Fibrograph and is closely correlated with staple length.

The micronaire reading is a relative measure of the fineness of the fiber. Higher readings indicate course fiber and low readings indicate fine fiber.

The fiber strength (T_1) is measured on the stelometer. Higher readings indicate fibers of greater strength and low readings indicate fibers of lesser strength.

Detailed laboratory analysis of the fiber properties of these cottons may be obtained on request from the Department of Agronomy, University of Tennessee.

Table 11. Cotton: Yield of lint per acre of varieties tested in 1964

Variety	State[1] avg.	Jackson[2]	Fort Pillow[3]	Ames[4] Plantation	Knoxville[5]
			Lint pounds per acre		
Auburn M	1056	1279	874	1015	1060
Stardel	1037	1273	876	962	1069
Dixie King II	1022	1291	932	844	1085
Auburn 56	997	1273	836	882	1004
Cobal	987	1120	964	878	1057
Deltapine 45	977	1218	894	819	1022
Stoneville 213	974	1268	827	828	1028
Rex Smoothleaf	973	1267	815	837	1064
Stoneville 7A	951	1284	720	850	982
DeKalb 220	943	1215	781	832	1004
DeKalb 108	915	1173	778	793	1096
Empire W.R. 61	890	1082	830	757	1073
Coker 100A (WR)	856	1206	667	694	979
Carolina Queen	845	1100	680	754	1083
Deltapine Smooth Leaf	843	1059	676	795	965
Experimentals:					
T-59-134	1136	1316	1040	1051	1236
T-56-210	1048	1306	855	982	993
T-58-169	1020	1259	837	964	1066
B-57-478	1003	1191	924	894	1121
Emp. Der. K8	999	1234	855	909	1051
AHA Der. K 7	845	1048	748	740	1015
L.S.D (.05)		101.7	109.2	109.7	108.3
C. V. %		8.6	13.4	13.0	10.5

[1]Knoxville data not included in state average.
[2]Memphis and Grenada silt loam, (0% to 2% slopes).
[3]Morganfield and Adler silt loam, (0% to 2% slopes).
[4]Loring silt loam, (2% to 5% slopes).
[5]Cumberland clay loam, eroded, (5% to 8% slopes).

Table 12. Cotton: Characteristics of 21 cotton varieties tested at three locations in 1964[1]

Variety	State avg. yield	Percent lint	Bolls per lb.	Percent total yield at 1st picking	Earliness[2] index
	Lint lb./A	%	No.	%	%
Auburn M	1056	35.3	63	72	100
Stardel	1037	37.0	75	70	95
Dixie King II	1022	36.4	57	67	90
Auburn 56	997	34.8	66	67	87
Cobal	987	34.6	60	78	102
Deltapine 45	977	36.3	74	69	88
Stoneville 213	974	35.7	72	62	79
Rex Smoothleaf	973	34.4	62	72	91
Stoneville 7A	951	36.2	71	64	78
DeKalb 220	943	34.9	64	64	78
DeKalb 108	915	34.7	64	63	75
Empire W.R. 61	890	34.0	56	68	81
Coker 100A (WR)	856	35.0	69	59	65
Carolina Queen	845	35.6	67	59	64
Deltapine Smooth Leaf	843	36.4	76	64	70
Experimentals:					
T-59-134	1136	37.6	62	74	111
T-56-210	1048	35.3	62	75	102
T-58-169	1020	34.9	62	71	94
B-57-478	1003	34.5	64	76	99
Emp. Der. K8	999	34.4	60	74	96
AHA Der. K7	845	32.7	64	65	72

[1]Knoxville data not included in this table.

[2]Earliness index is the lint yield at first picking of each variety expressed as a percentage of the lint yield of Auburn M at first picking.

Table 13. Cotton: Yield and other characteristics of varieties tested for 3 years 1962-64[1]

Variety	Average	Percent lint	Bolls per lb.	Percent total yield at 1st picking
	Lint lb./A.	%	No.	%
Auburn M	1027	36.8	67	79
Stardel	984	38.3	79	78
Dixie King II[2]	963	36.9	58	72
Stoneville 213	956	38.4	76	72
Auburn 56	948	35.9	70	73
Stoneville 7A	923	38.3	75	69
Carolina Queen	921	38.0	70	69
DeKalb 108	917	36.2	66	71
DeKalb 220	916	37.1	68	74
Coker 100A (WR)	916	37.1	72	68
Rex Smoothleaf	910	36.4	65	80
Cobal	902	36.0	63	84
Empire W.R. 61	874	35.8	58	75
Deltapine Smooth Leaf	867	38.4	78	70
Experimentals:				
T-56-210	988	37.2	66	82

[1]Knoxville data not included in this table. [2]Tested in 1962 and 1963 as Dixie King.

Table 14. Cotton: Average yield for varieties tested for 3 years 1962-64[1]

Variety	3 Yr. avg. 1962-64	Jackson	Fort Pillow	Ames[2] Plantation	Knoxville
	Lint pounds per acre				
Auburn M	1027	1023	1065	977	880
Stardel	984	976	1033	922	869
Dixie King II[3]	963	989	1046	799	812
Stoneville 213	956	982	1016	828	839
Auburn 56	948	937	1005	880	814
Stoneville 7A	923	978	935	823	814
Carolina Queen	921	931	1007	778	853
DeKalb 108	917	899	983	844	853
DeKalb 220	916	926	965	828	813
Coker 100A (WR)	916	921	994	793	815
Rex Smoothleaf	910	956	954	774	825
Cobal	902	866	990	826	779
Empire W.R. 61	874	887	940	754	810
Deltapine Smooth Leaf	867	847	924	810	749
Experimentals:					
T-56-210	988	967	1039	943	886

[1]Knoxville data not included in average.
[2]Two years data only.
[3]Tested in 1962 and 1963 as Dixie King.

Table 15. Cotton: Upper Half Mean (UHM) Fiber Length (in Inches) of varieties tested in 1963

Variety	Average[1]	Jackson 1963	Fort Pillow 1963	Ames Plantation 1963	Knoxville 1963
Empire W.R. 61	1.11	1.04	1.16	1.14	1.14
Coker 100A (WR)	1.10	1.05	1.14	1.12	1.18
Carolina Queen	1.10	1.04	1.14	1.12	1.18
Delta Queen	1.10	1.05	1.14	1.11	1.18
DeKalb 220	1.08	1.01	1.14	1.07	1.14
Cobal	1.08	1.02	1.12	1.11	1.18
Stoneville 7A	1.07	1.02	1.14	1.06	1.16
Auburn 56	1.07	1.02	1.11	1.08	1.16
Deltapine Smooth Leaf	1.07	1.04	1.12	1.04	1.15
DeKalb 108	1.07	1.00	1.15	1.06	1.16
Rex Smoothleaf	1.07	1.00	1.15	1.08	1.16
Stoneville 213	1.06	1.03	1.08	1.05	1.14
Auburn M	1.06	1.03	1.11	1.06	1.14
Stardel	1.06	1.00	1.10	1.09	1.16
Dixie King	1.06	1.00	1.12	1.07	1.14
Fox 4	1.05	1.00	1.10	1.05	1.16
Experimentals:					
Emp. Der. K8	1.08	1.00	1.12	1.10	1.19
T-56-210	1.05	1.00	1.07	1.08	1.13
T-56-312	1.05	0.98	1.11	1.06	1.10
AHA Der. K7	1.04	1.00	1.06	1.06	1.13
T-59-134	1.03	0.96	1.08	1.06	1.11
B-57-478	1.02	0.95	1.06	1.03	1.04

[1]Knoxville data not included in Average.

Table 16. Cotton: Upper Half Mean (UHM) Fiber Length (in Inches) of varieties tested from 1961-63

Variety	Average[1]	Jackson 1961-63	Fort Pillow 1962-63	Ames Plantation 1963	Knoxville 1961-63
Delta Queen	1.12	1.11	1.13	1.11	1.22
Coker 100A (WR)	1.12	1.11	1.14	1.12	1.21
Empire W.R. 61[2]	1.11	1.08	1.12	1.14	1.18
Cobal	1.11	1.10	1.13	1.11	1.21
Stoneville 7A[3]	1.10	1.09	1.14	1.06	1.19
Deltapine Smooth Leaf	1.10	1.10	1.13	1.04	1.19
DeKalb 220	1.10	1.09	1.12	1.07	1.19
Dixie King	1.09	1.08	1.11	1.07	1.16
DeKalb 108	1.09	1.08	1.13	1.06	1.18
Auburn 56	1.09	1.07	1.12	1.08	1.16
Stardel	1.08	1.07	1.10	1.09	1.19
Rex Smoothleaf[4]	1.08	1.05	1.14	1.08	1.17
Fox 4	1.08	1.08	1.10	1.05	1.18
Experimentals:					
T-56-210	1.07	1.06	1.08	1.08	1.15
T-56-312	1.06	1.05	1.09	1.06	1.14

[1]Does not include the Knoxville data, but is an average of the fiber strength of individual years at the 3 locations in West Tennessee.

[2]Tested in 1961 as Empire W. R.
[3]Tested in 1961 as Stoneville 7.
[4]Tested in 1961 and 1962 as Rex.

Table 17. Cotton: Fiber fineness of varieties tested in 1963 (Micronaire Reading)

Variety	Average[1]	Jackson 1963	Fort Pillow 1963	Ames Plantation 1963	Knoxville 1963
Stoneville 213	5.06	5.14	4.83	5.22	4.40
Fox 4	5.02	5.32	4.66	5.09	4.43
Stoneville 7A	4.90	4.95	4.76	5.00	4.40
Deltapine Smooth Leaf	4.76	4.96	4.52	4.80	4.04
Carolina Queen	4.74	4.92	4.52	4.79	4.22
Stardel	4.74	4.79	4.62	4.82	4.29
Coker 100A (WR)	4.58	4.58	4.39	4.79	4.20
DeKalb 220	4.52	4.69	4.16	4.72	4.06
Auburn M	4.48	4.50	4.34	4.61	3.96
Delta Queen	4.45	4.52	4.28	4.56	4.05
Auburn 56	4.45	4.56	4.16	4.62	4.09
Dixie King	4.44	4.55	4.33	4.44	4.06
DeKalb 108	4.42	4.48	4.28	4.50	4.10
Rex Smoothleaf	4.28	4.26	4.02	4.58	3.76
Cobal	4.27	4.20	4.09	4.50	3.88
Empire W.R. 61	4.14	4.42	3.98	4.02	3.78
Experimentals:					
AHA Der. K7	4.86	4.92	4.69	4.98	4.44
T-59-134	4.57	4.79	4.26	4.66	4.12
T-56-312	4.48	4.55	4.26	4.62	4.16
T-56-210	4.35	4.50	4.02	4.54	4.16
B-57-478	4.32	4.43	4.16	4.38	4.15
Emp. Der. K8	4.25	4.32	4.06	4.38	3.83

[1]Knoxville data not included in average.

Table 18. Cotton: Fiber fineness of varieties tested from 1961-63 (Micronaire Reading)

Variety	Average[1]	Jackson 1961-63	Fort Pillow 1962-63	Ames Plantation 1963	Knoxville 1961-63
Stoneville 7A[2]	4.76	4.66	4.79	5.00	4.46
Fox 4	4.75	4.65	4.74	5.09	4.38
Deltapine Smooth Leaf	4.57	4.43	4.66	4.80	4.14
Stardel	4.42	4.18	4.58	4.82	4.10
Coker 100A (WR)	4.38	4.20	4.44	4.79	4.16
Dixie King	4.34	4.26	4.41	4.44	4.09
Auburn 56	4.31	4.18	4.36	4.62	4.06
DeKalb 220	4.27	4.11	4.29	4.72	3.99
DeKalb 108	4.25	4.10	4.34	4.50	4.02
Delta Queen	4.22	4.03	4.33	4.56	3.97
Cobal	4.13	3.98	4.17	4.50	3.88
Rex Smoothleaf[3]	4.08	3.92	4.08	4.58	3.76
Empire W.R. 61[4]	4.01	3.97	4.07	4.02	3.76
Experimentals:					
T-56-312	4.26	4.15	4.26	4.62	4.08
T-56-210	4.18	4.14	4.06	4.54	4.02

[1]Does not include the Knoxville data, but is an average of the fiber fineness of individual years at the 3 locations in West Tennessee.

[2]Tested in 1961 as Stoneville 7.
[3]Tested in 1961 and 1962 as Rex.
[4]Tested in 1961 as Empire W. R.

Table 19. Cotton: Fiber Strength, T[1], as Measured on the Stelometer of Varieties Tested in 1963.

Variety	Average[1]	Jackson 1963	Fort Pillow 1963	Ames Plantation 1963	Knoxville 1963
Fox 4	1.93	1.96	1.96	1.88	1.91
Deltapine Smooth Leaf	1.93	1.98	1.92	1.90	1.90
Stardel	1.92	1.85	1.85	2.08	2.00
Cobal	1.92	1.89	1.90	1.97	1.85
Delta Queen	1.90	1.94	1.87	1.88	1.88
Auburn 56	1.87	1.86	1.89	1.86	1.90
Empire W.R. 61	1.86	1.78	1.86	1.96	1.80
Coker 100A (WR)	1.86	1.90	1.84	1.83	1.81
Carolina Queen	1.84	1.82	1.80	1.90	1.86
Stoneville 213	1.82	1.81	1.78	1.86	1.80
DeKalb 220	1.82	1.76	1.86	1.84	1.87
Stoneville 7A	1.81	1.82	1.82	1.78	1.79
Auburn M	1.81	1.80	1.84	1.78	1.87
Dixie King	1.80	1.74	1.84	1.80	1.86
Rex Smoothleaf	1.76	1.70	1.77	1.81	1.67
DeKalb 108	1.74	1.78	1.66	1.79	1.86
Experimentals:					
AHA Der. K7	2.04	2.08	2.08	1.96	2.04
Emp. Der. K8	1.89	1.79	1.97	1.90	1.86
T-59-134	1.85	1.69	1.98	1.88	1.76
B-57-478	1.85	1.72	1.90	1.92	1.83
T-56-210	1.83	1.76	1.80	1.92	1.86
T-56-312	1.81	1.66	1.82	1.94	1.82

[1]Knoxville data not included in average.

Table 20. Cotton: Fiber strength, T_1, as measured on the Stelometer of varieties tested from 1961-63

Variety	Average[1]	Jackson 1961-63	Fort Pillow 1962-63	Ames Plantation 1963	Knoxville 1961-63
Deltapine Smooth Leaf	1.93	1.96	1.90	1.90	1.93
Fox 4	1.92	1.94	1.92	1.88	1.97
Stardel	1.92	1.89	1.88	2.08	2.06
Delta Queen	1.89	1.90	1.88	1.88	1.92
Cobal	1.88	1.85	1.88	1.97	1.90
Empire W.R. 61[2]	1.83	1.80	1.82	1.96	1.84
Auburn 56	1.83	1.82	1.82	1.86	1.90
Coker 100 (WR)	1.83	1.83	1.82	1.83	1.88
DeKalb 220	1.81	1.79	1.81	1.84	1.88
Stoneville 7A[3]	1.79	1.78	1.80	1.78	1.87
Dixie King	1.77	1.76	1.77	1.82	1.86
DeKalb 108	1.76	1.78	1.72	1.79	1.88
Rex Smoothleaf[4]	1.71	1.66	1.72	1.81	1.74
Experimentals:					
T-56-210	1.85	1.84	1.84	1.92	1.90
T-56-312	1.78	1.72	1.78	1.94	1.85

[1]Does not include the Knoxville data, but is an average of the fiber strength of individual years at the 3 locations in West Tennessee.

[2]Tested in 1961 as Empire W. R.
[3]Tested in 1960 as Stoneville 7.
[4]Tested in 1961 and 1962 as Rex.

FALL-SEEDED SMALL GRAIN

Generally good yields of small-grains were obtained over the state in 1964. Carolee oat suffered severe winter kill at Crossville, and this can be seen in Figure 3. The Carolee stand at Knoxville was reduced some by winter injury.

No 1964 oat yield data are reported from Greeneville, because of inadequate stands obtained due to dry weather at the time of seeding.

Very little winter injury was noted on the barley and wheat. A summary of the disease injury to small grain is presented in tables 30 through 32.

Figure 3. Oat variety test, Crossville, April 6, 1964. Note winterkill of Carolee as compared with Forkedeer.

Figure 4. Lodging in 1) Blount and 2) Fordedeer oats, Knoxville, June 7, 1964.

Table 21. Fall-seeded oats: Yield summary of varieties tested in 1964

Variety	State[1] avg. 1962-64	State avg. 1964	Knoxville[2]	Crossville[3]	Spring Hill[4]	Jackson[5]	Springfield[6]
				Bushels per acre			
Blount	75	102	89	139	98	68	114
LeConte	67	88	82	125	80	50	105
Forkedeer	66	80	47	106	91	53	103
Carolee	—	89	70	70	89	92	126
Experimentals:							
Tenn. 60-32	79	101	75	129	98	91	113
Tenn. 59-19	66	91	65	114	77	83	117
Tenn. 61-231	—	105	79	132	107	93	114
Tenn. 61-229	—	104	87	129	104	88	115
Tenn. 61-224	—	96	74	127	83	76	121
Tenn. 61-221	—	90	72	114	95	66	101
L.S.D. (.05)	—	—	6.5	21.2	10.7	15.6	7.4
C.V. %	—	—	5.1	12.3	8.0	14.2	4.5

[1]Does not include Greeneville data.
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Hartsells loam, eroded (2% to 5% slopes).
[4]Maury silt loam, eroded (2% to 5% slopes).
[5]Memphis silt loam, (0% to 2% slopes), and Granada silt loam (0% to 2% slopes).
[6]Dickson silt loam, eroded (2% to 5% slopes).

Table 22. Fall-seeded oats: Yield summary of varieties tested at 5 locations for 3 years, 1962-64

Variety	Average	Knoxville	Crossville	Springfield	Spring Hill	Jackson
			Bushels per acre			
Blount	75	58	96	94	82	46
LeConte	67	51	92	82	69	40
Forkedeer	66	39	84	86	77	44
Experimentals:						
Tenn. 59-19	66	43	80	90	67	52
Tenn. 60-32	80	51	102	98	88	59

Table 23. Fall-seeded oats: Characteristics of varieties

Variety	Standing ability	Relative maturity	Plant height in inches, 1964	Test weight 1964
Blount	Good	Med.-Late	45	34
LeConte	Good	Late	46	35
Forkedeer	Poor	Med.	48	34
Carolee	Fair	Early	45	32
Experimentals:				
Tenn. 59-19	Fair	Early	44	35
Tenn. 60-32	Fair	Med.-Late	43	34
Tenn. 61-229	Good	Late	46	36
Tenn. 61-231	Fair	Med.	44	35
Tenn. 61-224	Good	Early	47	36
Tenn. 61-221	Fair	Early	46	34

Table 24. Wheat: Yield summary of varieties tested in 1964

State avg. 1962-64	Variety	State avg. 1964	Greene-ville[1]	Knox-ville[2]	Cross-ville[3]	Spring Hill[4]	Jack-son[5]	Spring-field[6]
					Bushels per acre			
45	Monon	47	56	36	68	34	39	48
43	Seneca	40	35	31	63	30	33	46
42	Knox	42	57	33	36	36	36	50
40	Duel	40	39	37	50	35	36	42
—	Knox 62	40	39	30	51	34	34	53
—	Reed	45	53	40	61	34	40	42
—	Triumph[7]	—	—	—	—	—	—	38
	Experimentals:							
46	Tenn. 60-23	48	45	36	71	38	40	55
41	Tenn. 60-18	42	50	30	64	36	36	38
—	Tenn. 61-330	41	40	34	60	32	35	46
—	Tenn. 61-35	37	38	32	40	33	41	40
—	L.S.D. (.05)	—	8.5	5.1	19.2	N.S.	N.S.	3.6
—	C.V %	—	13.0	8.7	23.5	11.0	10.9	5.5

[1]Cumberland silt loam, eroded (5% to 12% slopes) and Hermitage silt loam, eroded (2% to 5% slopes).
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Hartsells loam, eroded (2% to 5% slopes).
[4]Maury silt loam, eroded (2% to 5% slopes).
[5]Memphis silt loam, (0% to 2% slopes).
[6]Dickson silt loam, eroded (2% to 5% slopes).
[7]Hard red winter wheat included for comparison.

Table 25. Wheat: Yield summary of varieties tested at 5 locations for 3 years, 1962-64

Variety	Average	Knoxville	Crossville	Springfield	Spring Hill	Jackson
				Bushels per acre		
Monon	44	36	51	44	43	45
Seneca	44	34	57	47	42	37
Knox	40	36	41	42	42	42
Dual	39	36	46	40	41	34
Triumph[1]	—	—	—	34	—	—
Experimentals:						
Tenn. 60-23	45	35	59	49	45	38
Tenn. 60-18	40	32	54	37	39	36

[1]Hard red winter wheat included for comparison.

Table 26. Wheat: Characteristics of varieties

Variety	Standing ability	Relative maturity	Plant height in inches, 1964	Test weight 1964
Monon	Fair	V. Early	45	56
Seneca	Good	Med.-Late	52	55
Knox	Poor	V. Early	46	55
Dual	Good	Late	50	54
Knox 62	Poor	V. Early	45	56
Reed	V. Good	Late	49	56
Triumph[1]	Fair	Early	45	—
Experimentals:				
Tenn. 60-23	Good	Late	52	57
Tenn. 60-18	Fair	Med.-Late	50	55
Tenn. 61-35	Fair	Med.-Late	52	54
Tenn. 61-330	Good	Med.-Late	52	55

[1]Hard red winter wheat tested at one location, Springfield.

Table 27: Barley: Yield summary of varieties tested in 1964

Variety	State avg. 1962-64	State avg. 1964	Greene-ville[1]	Knox-ville[2]	Cross-ville[3]	Spring Hill[4]	Jack-son[5]	Spring-field[6]
			Bushels per acre					
Dayton	62	70	75	53	93	59	50	91
Hudson	62	63	67	48	95	50	35	85
Kenbar	54	51	57	45	43	52	28	80
Wade	—	67	78	57	90	62	23	94
Pennrad	—	61	77	50	74	48	28	87
Rogers	—	61	64	46	112	48	32	65
Experimentals:								
Tenn. 59-15	62	69	60	57	94	60	50	93
Tenn. 60-19	57	66	71	51	94	54	47	77
Tenn. 61-119	—	70	70	54	95	64	46	90
Tenn. 61-116	—	68	60	57	99	64	42	85
Tenn. 61-113	—	67	54	56	104	62	44	83
L.S.D. (.05)	—	—	8.5	7.6	10.6	8.2	8.6	6.5
C. V. %	—	—	8.8	10.1	8.2	10.1	15.4	5.3

[1]Cumberland silt loam, eroded (5% to 12% slopes).
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Hartsells loam, eroded (2% to 5% slopes).
[4]Huntington silt loam, (0% to 2% slopes).
[5]Loring silt loam, (0% to 2% slopes), Grenada silt loam (0% to 2% slopes), and Dexter loam (2% to 5% slopes).
[6]Dickson silt loam, eroded (2% to 5% slopes).

Table 28. Barley: Yield summary of varieties tested at 6 locations for 3 years, 1962-64

Variety	Average	Greene-ville	Knox-ville	Cross-ville	Spring-field	Spring Hill	Jack-son
				Bushels per acre			
Dayton	62	54	45	71	76	71	58
Hudson	62	63	48	76	69	67	50
Kenbar	54	51	43	58	69	63	42
Experimentals:							
Tenn. 59-15	62	53	44	70	70	77	62
Tenn. 60-19	57	59	42	70	56	57	57

Table 29. Barley: Characteristics of varieties

Variety	Standing ability	Relative Maturity	Plant height in inches 1964	Test weight 1964
Dayton	Good	Early	39	46
Hudson	Fair	Late	43	51
Kenbar	Fair	Early	37	48
Wade	Fair	Early	38	48
Pennrad	Fair	Late	43	47
Rogers	Poor	Late	41	50
Experimentals:				
Tenn. 59-15	Good	Early	42	45
Tenn. 60-19	Good	Early	44	50
Tenn. 61-116	Fair	Early	42	45
Tenn. 61-119	Good	Med.	44	47
Tenn. 61-113	Fair	Med.	44	46

Table 30. Susceptibility of wheat varieties to diseases[1] under natural field conditions at 7 locations, 1964

Variety	Knox-ville	Greene-ville	Cross-ville	Spring-field	Spring Hill	Jack-son[3]	Martin
Wheat				**Leaf Rust**			
Dual	0	0	0	0	0	T	T
Knox	0	T	0	T	0	T	1
Seneca	2	1	0	T	0	2	2
Monon	0	0	0	T	0	T	2
Knox 62	0	T	0	T	0	T	1
Reed	0	0	0	0	0	T	0
Tenn. 61-330	T	T	0	0	0	T	1
Tenn. 60-23	0	0	0	T	0	1	1
Tenn. 60-18	T	T	0	T	0	T	1
Tenn. 61-35	T	T	0	T	0	1	T
Triumph[2]	—	—	—	1	—	—	—
				Powdery Mildew			
Dual	3	T	2	3	T	0	1
Knox	T	T	T	T	T	0	0
Seneca	3	2	2	4	2	0	2
Monon	3	2	3	2	1	0	T
Knox 62	2	T	T	T	T	0	0
Reed	3	2	2	4	3	0	2
Tenn. 61-330	3	2	2	2	2	0	1
Tenn. 60-23	0	T	T	2	T	0	T
Tenn. 60-18	3	2	2	3	2	0	2
Tenn. 61-35	3	2	2	3	2	0	2
Triumph	—	—	—	T	—		—

[1]Leaf rust ratings on wheat were based on Cobb's modified scale ranging from 0, in which no disease symptoms were apparent, to 6 in which the leaf surface was entirely covered with rust. All other diseases were rated on a scale of 0 to 6. The letter "T" (Trace) was used to indicate that a few localized spots of a disease occurred, or that the percentage of the leaf surface affected was less than 1%.

[2]Included at Springfield as a check.

[3]Stem rust instead of leaf rust.

Table 31. Susceptibility of barley varieties to diseases[1] under natural field conditions at 5 locations, 1964

Variety	Knoxville	Greeneville	Crossville	Springfield	Spring Hill	Jackson
Barley			**Leaf Rust**			
Dayton	T	2	T	0	0	—[2]
Kenbar	1	1	T	0	0	—
Wade	0	T	0	0	0	—
Hudson	T	T	T	0	0	—
Pennrad	T	2	T	0	0	—
Rogers	T	T	T	0	0	—
Tenn. 59-15	T	2	T	0	0	—
Tenn. 60-19	T	1	0	0	0	—
Tenn. 61-116	1	1	T	0	0	—
Tenn. 61-119	T	2	T	0	0	—
Tenn. 61-113	1	1	T	0	0	—
			Powdery Mildew			
Dayton	3	T	0	0	1	—
Kenbar	2	T	0	0	0	—
Wade	2	1	0	0	1	—
Hudson	0	0	0	0	0	—
Pennrad	0	0	0	0	T	—
Rogers	0	0	0	0	0	—
Tenn. 59-15	T	0	0	0	T	—
Tenn. 60-19	3	1	0	0	1	—
Tenn. 61-116	4	1	0	0	3	—
Tenn. 61-119	T	0	0	0	T	—
Tenn. 61-113	3	2	0	0	3	—

[1]The barley varieties were rated for diseases in the same manner as the wheat varieties.
[2]A blank space (—) indicates that the barley was too mature and no disease rating was made.

Table 32. Susceptibility of oat varieties to diseases[1] under natural field conditions at 6 locations, 1964

Variety	Knoxville	Greeneville	Crossville	Springfield	Spring Hill	Jackson
Oats			**Powdery Mildew**			
Blount	0	1	0	1	0	0
LeConte	0	3	0	3	0	0
Forkedeer	0	2	0	1	0	0
Carolee	0	1	0	1	0	0
Tenn. 59-19	0	2	0	1	0	0
Tenn. 60-32	0	2	0	4	0	0
Tenn. 61-229	0	3	0	3	0	0
Tenn. 61-231	0	3	0	4	0	0
Tenn. 61-224	0	3	0	2	0	0
Tenn. 61-221	0	3	0	1	0	0

[1]The oat varieties were rated for disease in the same manner as the wheat varieties.

ALFALFA

Results reported here are from tests seeded in 1960, 1961 and 1962. Two tests are being conducted at Knoxville. One was seeded in 1960 and the other in 1961. Results for both tests are reported. The 1962 tests were seeded at Spring Hill, Jackson, and Crossville.

Differential heaving of varieties was observed at Jackson and Greeneville in the winter of 1963-64. P.A.G. FD-100 and DuPuits were two of the worst varieties to heave. Such varieties as Buffalo and Williamsburg heaved very little. This heaving resulted in reduction of stand for varieties such as DuPuits and P.A.G. FD-100. No serious disease was noted on any of the tests during the 1964 growing season. However, in 1963 both tests at Knoxville were infected with Southern anthracnose and leaf spot diseases (both large and small). It appeared that a reduction in stand of several varieties at Knoxville was due to the Southern anthracnose. The infestation of the plants by leaf spot diseases was not heavy enough to cause much damage.

Dry weather during the summer months in 1964 reduced the yield at all locations. The test at Springfield suffered most from the lack of moisture.

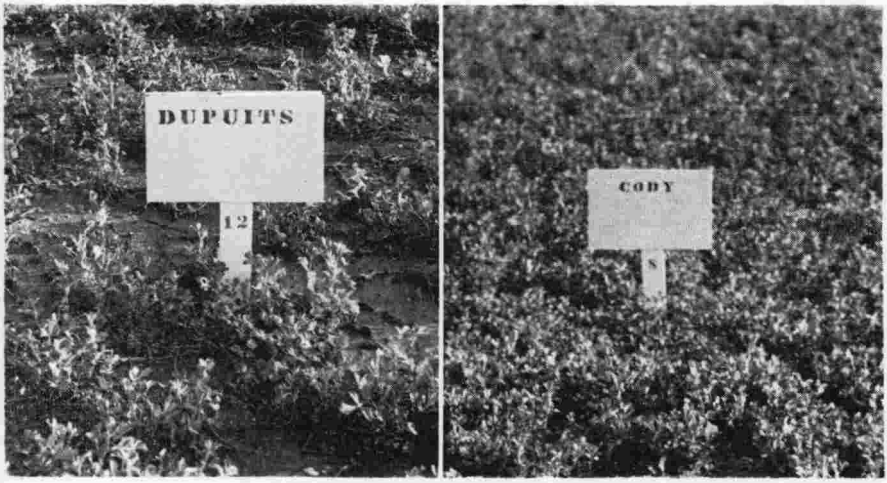

Figure 5. Alfalfa variety test, Jackson, March 9, 1964. Test seeded in the fall of 1962. Note the thin stand of DuPuits as compared with Cody.

Table 33. Alfalfa: Yield summary of tests seeded in 1962

Variety	Avg.	Jackson[1]		Columbia[2]		Crossville[3]	
		1963	1964	1963	1964	1963	1964
		Tons of air-dry hay per acre					
Williamsburg	4.50	4.06	4.74	5.60	5.02	2.24	5.32
Cody	4.44	3.86	4.65	5.06	5.02	2.20	5.88
Buffalo	4.34	4.16	4.57	5.15	4.91	2.07	5.22
Vernal	4.29	3.93	4.59	4.77	4.70	2.04	5.71
Atlantic	4.21	3.62	4.22	5.52	4.99	1.87	5.02
Culver	4.18	3.63	4.44	5.11	4.74	1.93	5.24
Narragansett	4.13	3.73	4.24	5.58	4.42	2.12	4.68
Cardinal	4.10	3.92	3.47	5.79	4.79	2.11	4.54
P.A.G. FD-100	4.06	3.75	3.54	5.68	4.58	2.17	4.64
Orchies	3.98	3.80	3.83	4.98	3.90	2.36	5.00
DuPuits	3.90	3.78	3.84	5.42	4.02	2.08	4.22
Cherokee	—	3.78	4.59	—	—	—	—
Europe	—	—	—	5.77	4.99	2.26	5.18
L.S.D. (.05)		N.S.	0.44	0.59	0.72	N.S.	0.64
C.V. %		6.5	7.2	7.6	10.7	10.6	8.8

[1]Loring silt loam, (0% to 2% slopes).
[2]Maury silt loam, (2% to 5% slopes).
[3]Hartsells loam, (2% to 5% slopes).

Table 34. Alfalfa: Yield summary of tests seeded in 1961

Variety	Avg.	Knoxville[1]			Greeneville[2]		
		1962	1963	1964	1962	1963	1964
		Tons of air-dry hay per acre					
Williamsburg	3.80	3.67	3.36	2.77	3.05	5.95	4.00
P.A.G. FD-100	3.60	3.42	3.02	2.62	2.67	6.00	3.88
Culver	3.50	2.60	3.16	2.39	2.98	5.88	4.00
Socheville	3.43	3.47	2.73	1.87	2.62	5.94	3.95
Narragansett	3.42	2.62	2.91	2.24	2.80	5.95	3.97
Orchies	3.34	3.10	2.72	2.14	2.78	5.82	3.47
Buffalo	3.30	2.02	2.48	2.37	3.07	5.97	3.90
DuPuits	3.16	2.84	2.08	1.47	2.68	5.92	3.95
Maliani	301	2.02	2.63	2.16	2.57	5.25	3.45
Ranger	—	3.28	3.60	2.94	—	—	—
Stoneville P.C. 1	—	3.09	3.74	2.93	—	—	—
N.C. Syn. F(56)1	—	3.22	3.18	2.43	—	—	—
Rhizoma	—	2.98	3.46	2.28	—	—	—
N.C. Syn. G(57)2	—	2.94	2.97	2.50	—	—	—
N.C. Syn. G(57)3	—	2.89	2.62	2.13	—	—	—
Vernal	—	2.74	3.04	1.80	—	—	—
L.S.D. (.05)	—	0.86	N.S.	0.74	0.17	0.35	0.34
C.V. %	—	21.1	23.2	22.5	4.2	4.1	6.1

[1]Alcoa silt loam (2% to 5% slopes). [2]Cumberland silt loam, (2% to 5% slopes), eroded.

Table 35. Alfalfa: Yield summary of tests seeded in 1960

Variety	Avg.	Springfield[1]				Knoxville[2]			
		1961	1962	1963	1964	1961	1962	1963	1964
		Tons of air-dry hay per acre							
Williamsburg	3.77	2.48	3.61	5.76	3.50	2.88	4.60	5.13	2.22
DuPuits	3.73	2.48	3.60	5.97	3.34	2.90	4.80	4.76	1.98
Sochville	3.69	2.50	3.60	5.70	3.12	3.10	5.02	4.57	1.89
Buffalo	3.56	2.05	3.02	5.29	3.16	3.10	4.39	5.12	2.38
Narragansett	3.54	2.11	3.25	5.48	3.33	3.22	4.21	4.84	1.84
P.A.G. FD-100	3.52	2.52	3.51	5.64	2.83	3.24	4.32	4.44	1.70
Maliani	3.37	2.15	3.25	5.26	3.35	2.71	3.62	4.39	2.20
Lahontan	3.37	1.99	3.10	5.25	3.54	2.52	3.27	4.74	2.52
Zia	3.28	1.91	2.77	5.17	3.36	1.97	4.27	4.54	2.28
Vernal	3.27	1.94	3.01	5.18	3.06	2.40	3.86	4.82	1.87
Orchies	—	2.30	3.32	5.64	3.35	—	—	—	—
N.C. Syn. G(57)3	—	—	—	—	—	3.46	5.11	4.76	1.92
N.C. Syn. F(56)1	—	—	—	—	—	2.82	5.14	4.96	2.22
N.C. Syn. G(57)2	—	—	—	—	—	2.96	4.66	5.03	2.15
N.C. Syn. E(58)	—	—	—	—	—	2.87	4.46	5.17	2.16
Ranger	—	—	—	—	—	2.44	3.95	5.10	1.97
Rhizoma	—	—	—	—	—	3.14	3.68	4.38	1.73
L.S.D. (.05)	—	0.30	0.43	0.46	N.S.	0.67	0.57	0.40	0.28
C.V. %	—	9.2	9.1	5.8	10.1	16.4	9.4	5.8	10.5

[1]Bewleyville silt clay loam, (2% to 5% slopes), severely eroded.
[2]Cumberland loam, (2% to 5% slopes).

SOYBEANS

Soybean varieties were tested at Martin, Jackson, and Spring Hill in 1964. No data for Martin are reported because threshing of the 1964 test has not been completed.

The 1963 irrigated soybean data at Jackson were furnished by W. L. Parks, Professor of Agronomy, U. T. Agricultural Experiment Station, Knoxville. No 1964 irrigated data are presented because the test has not been completed.

Data is presented in Tables 36 and 37.

Table 36. Soybeans: Yield summary of varieties tested in 1963 and 1964

Variety	Spring Hill		Jackson				Approximate date of maturity
	1963[1]	1964[2]	1963[3]	1963[4]	1963[5]	1964[6]	
	Bushels per acre						
Hill	37	27	20	28	41	39	Sept .26
Lee	30	20	18	28	37	41	Oct. 25
Kent	39	26	23	—	—	42	Sept. 14
Ogden	34	24	—	14	36	—	Oct. 15
Dorman	34	—	—	23	43	—	Sept. 28
Hood	—[7]	28	—	29	30	—	Oct. 15
Hampton 266*	20	18	14	—	—	36	Nov. 1
Hale 3	35	—	15	—	—	—	Oct. 15
Rebel	—	—	—	14	27	—	Nov. 1
Rebel 22	—	—	—	—	—	38	Nov. 1
Arthur Hopkins	21	—	12	—	—	—	Oct. 28
Experimentals:							
T-61-48	—	22	—	—	—	39	Oct. 28
T-61-50	—	21	—	—	—	42	Oct. 28
L.S.D. (.05)	4.2	2.2	5.0	6.4	8.8	N.S.	
C.V. %	11.8	6.4	19.4	15.7	13.5	7.9	

[1]Maury silt loam, (2% to 5% slopes).
[2]Maury silt loam, (2% to 5% slopes).
[3]Memphis silt loam, (0% to 2% slopes).
[4]Memphis silt loam, (0% to 2% slopes).
[5]Memphis silt loam, (0% to 2% slopes).
[6]Grenada silt loam, (0% to 2% slopes).
[7]No yield obtained due to poor germination.
*Tested in 1963 as Hampton.

Table 37. Soybeans: Characteristics of varieties

Variety	Seed color	Hilum color	Flower color	Pubescence	Seed quality	Resistance to shattering
Hill	Yellow	Light-brown	White	Tawny	Good	Good
Dorman	Yellow	Buff	White	Gray	Good	Med.
Hood	Yellow	Buff	Purple	Gray	Good	Med.
Ogden	Olive-green	Brownish-black	Purple	Gray	Good	Fair
Lee	Yellow	Black	Purple	Tawny	Good	Good

GRAIN SORGHUM

The grain sorghum tests reported were conducted at Springfield and Spring Hill. The test at Jackson was destroyed by birds.

Dry weather reduced the yield at Springfield. Spring Hill had fair moisture during the growing season.

A good grain sorghum variety is one that has a high yield potential, open or loose head, early or medium maturity, good standing ability, good bird damage resistance, and the proper height for ease of combining.

Data are presented in tables 38 and 39.

Table 38. Grain sorghum: Yields and other characteristics of varieties tested in 1964

Variety	Avg.	Spring Hill[1]	Springfield[2]	Plant height	Head type	Grain moisture prior to harvest	Maturity
	Bushels per acre			in.		%	
Ga. 615	109	85	132	54	Open	21.5	Late
DeKalb E-57	104	88	119	52	Open	17.8	Late
Ranger A	100	84	116	48	Tight	16.8	Med.
P.A.G. 515	98	88	109	49	Tight	18.6	Late
Rico	96	81	111	46	Tight	17.6	Med.
Aks. 614	95	81	109	47	Open	15.1	Med.
R.S. 610	89	84	94	50	Tight	15.2	Med.
DeKalb F-63	89	70	107	51	Med.	17.6	Med.-Late
DeKalb C-44b	88	72	104	48	Med.-Open	15.2	Early
Co-op Exp. No.1	88	78	98	47	Tight	15.2	Med.
Frontier 400C	87	79	95	48	Med.-Tight	15.0	Med.
McCurdy 70	87	74	100	47	Tight	15.2	Med.
Lindsey 744	87	70	103	45	Med.Tight	14.4	Early
DeKalb E-56A	86	71	101	46	Open	15.0	Early
Lindsey 551	85	75	94	43	Tight	17.4	Med.-Late
P.A.G. 430	84	75	93	46	Med.	13.9	Early
Lindsey 755	81	75	86	45	Med.-Tight	16.2	Med.
McCurdy 62	79	70	89	39	Med.	16.1	Med.
Frontier 413	72	68	75	48	Tight	22.5	Late
Martin	68	65	70	41	Tight	14.4	Med.

[1]Maury silt loam, (2% to 5% slopes).
[2]Ennis silt loam, (0% to 5% slopes).

Table 39. Grain sorghums: Yield summary of varieties tested for 3 years, 1962-64

Variety	3 Yr. avg. 1962-'64	Plant height	Head type	Maturity
	Bu./A.	In.		
P.A.G. 515	99	52	Tight	Late
Frontier 400C	92	51	Tight	Med.
McCurdy 70	90	52	Tight	Med.
R.S. 610	89	51	Tight	Med.
Lindsey 744	88	46	Med.-Tight	Early
DeKalb F-63	88	51	Med.	Med.-Late
P.A.G. 430	87	46	Med.	Early
Lindsey 755	84	52	Med.-Tight	Med.
McCurdy 62	81	43	Med.	Med.
DeKalb E-56A	80	48	Open	Early
Martin	68	46	Tight	Med.

TOBACCO

Data for burley tobacco were furnished by L. J. Hoffbeck, Assistant Professor of Agronomy (cooperative with the USDA) and J. Hugh Felts, Superintendent, Tobacco Experiment Station.

Since the 1964 variety results were not yet available, the data included in the bulletin are for 1963 and previous years. Data were adjusted for lines tested less than 9 years in an attempt to make all values comparable. In Figure 6, note the upright-leaf growth of the new variety Burley 37. The burley varieties were tested at four locations and the dark-fired and dark air-cured tobacco at one location.

Data are presented in Tables 40 through 43.

Figure 6. The new blackshank-resistant Burley 37 variety. Note the upright-leaf growth habit.

Table 40. Burley tobacco: Average yield for 1963

Variety	State avg.	Greeneville[1]	Rutledge[2]	Spring Hill[3]	Springfield[4]
			Pounds per acre		
Ky. 10	2709	2670	2521	2562	3082
Burley 1	2630	2184	2563	2641	3130
Ky. 12	2532	2205	2605	2276	3042
Ky. 9	2409	2382	2360	1990	2905
Burley 21	2387	2253	2313	2307	2675
Burley 37	2203	1972	2164	2208	2468
Ky. 16	2194	1999	2256	1902	2620
Average	2438	2238	2397	2269	2846
L.S.D. (.05)	139	267	N.S.	291	201

[1]Lindside silt loam.
[2]Hayter loam.
[3]Maury silt loam.
[4]Huntington silt loam.

Table 41. Burley tobacco: Average yield for years 1955-63

Variety	Years tested	State avg.	Greeneville	Rutledge	Spring Hill	Springfield
			Pounds per acre			
Burley 1	1955-63	2262	2021	2470	2168	2389
Burley 21	1955-63	2159	1996	2297	2085	2259
Ky. 16	1955-63	2089	1902	2278	1928	2248
Ky. 35	1955-61[1]	2049	1909	2212	1870	2206
Burley 11A	1955-61	1871	1686	1990	1781	2027
Burley 2	1955-60	2134	1897	2325	2043	2273
Ky. 41A	1955-59	2015	1816	2192	1862	2190
Burley 11B	1955-59	1860	1697	2042	1682	2017
Ky. 10	1960-63	2361	2313	2487	2279	2366
Ky. 9	1959-63[2]	2237	2125	2363	2042	2419
Burley 37	1960-63	2046	1964	2166	2007	2049
Ky. 12	1961-63	2353	2172	2610	2178	2452
Average		2120	1958	2286	1994	2241

[1]Data were adjusted for lines tested less than 9 years in an attempt to make all values comparable.
[2]Ky. 9 was not included in the 1961 test.

Table 42. Dark fire-cured tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1961 through 1963

Variety	Acre yield				Acre value[1]			
	1961-63	1963[2]	1962[3]	1961[4]	1961-63	1963	1962	1961
	Pounds per acre				Dollars per acre			
Broad Leaf Madole	2183	2392	2413	1745	897	944	1042	704
Black Mammoth	2114	2356	2298	1687	865	923	1006	667
DF-516	2094	2212	2188	1881	814	843	929	669
Ky. 152	1983	2153	2126	1671	795	782	938	664
Ky. 157	1955	2141	2032	1693	791	804	883	686
Ky. 156	1817	1977	1890	1585	720	736	819	606
Ky. 155	1711	1949	1775	1408	679	756	744	536
Va. 331	—	2063	—	—	—	725	—	—
Va. 312	—	—	2250	1838	—	—	983	744
Little Stalk Black Mammoth	—	—	2194	1919	—	—	984	723
Experimentals:								
Tennex 900	1983	2160	2223	1566	759	750	933	594
Tennex 300	1959	2123	2200	1554	805	803	979	634
Tennex 901	—	2017	2211	—	—	737	917	—
Tennex 902	—	2232	—	—	—	949	—	—
Line 12	—	—	—	1431	—	—	—	588
L.S.D. (.05)		86	143	209		64	78	97
C.V. %		3.5	5.7	10.8		6.8	7.3	12.8

[1]These values are based on the average value for the various grades on all type 22 markets, during the 5-year period, 1954-58).
[2]Dickson silt loam, (2% to 5% slopes).
[3]Mountview silt loam (2% to 5% slopes), and Dickson silt loam (2% to 5% slopes).
[4]Sango silt loam, (2% to 5% slopes).

Table 43. Dark air-cured tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1961 through 1963

Variety	Acre yield				Acre value[1]			
	1961-63	1963[2]	1962[3]	1961[4]	1961-63	1963	1962	1961
	Pounds per acre				Dollars per acre			
Johns	2071	2211	2201	1802	783	857	838	655
Ky. 160	1901	2026	1979	1697	770	833	811	666
Ky. 163	1834	1929	1921	1651	689	714	700	654
Ky. 164	1546	1444	1655	1538	579	561	595	582
Va. Imp. Str. 2	—	—	2086	1757	—	—	839	668
Narrow Leaf One Sucker	—	—	1994	1690	—	—	774	623
Va. Imp. Str. 3	—	—	—	1668	—	—	—	631
Va. Sleek Stalk Str. 1	—	—	—	1504	—	—	—	549
Experimentals:								
O.S. 901	—	2285	—	—	—	874	—	—
O.S. 900	—	2197	—	—	—	776	—	—
L.S.D. (.05)	—	117	83	103	—	58	40	50
C.V. %	—	4.9	3.5	5.3	—	6.3	4.4	6.8

[1]These values are based on the average value for the various grades on all type 35 markets, during the 5-year period, 1954-58.
[2]Ennis silt loam, (0% to 2% slopes).
[3]Bewleyville silt loam (5%to 12% slopes), and Dickson silt loam (2% to 5% slopes).
[4]Sango silt loam, (2% to 5% slopes).

SUMMER ANNUAL GRASSES FOR GRAZING AND GREEN-CHOPPING

Sudangrass — Sudangrass-sorghum hybrids — Pearlmillet

By Henry A. Fribourg
Associate Professor of Agronomy, University of Tennessee

Summer annual grasses have become increasingly important in recent years, particularly in farm enterprises where a reliable source of large amounts of quality forage during the hot and dry part of the growing season is required. The development of improved varieties of Sudangrass and pearmillet and, more recently, of hybrids between Sudangrass and male-sterile sorghums, has resulted in a large number of varieties for which seed is available commercially. All these plants can be grazed, green-chopped, or even used for stored feed; however, they are difficult to cure properly for hay in Tennessee and are generally considered as emergency silage crops.

Variety evaluation tests have been conducted by the University of Tennessee since 1955, and the results obtained through 1962 have been published in Bulletin 373 of the Tennessee Agricultural Experiment Station.

Differentiation of the different varieties and hybrids of Sudangrass is difficult, especially if leaf characteristics alone are used. To some extent, seed shape, glume color, stalk size, maturity, sweetness of juices, presence of rhizomes, and nature of heads and blooms can all be utilized to differentiate between these varieties and hybrids. Some hybrids of Sudangrass and sorghum resemble true Sudangrasses, whereas others are similar in appearance to sweet sorghum, having characteristically thicker and juicier stalks. Others approach a grain sorghum in appearance, with compact heads and very large stalks.

The average state yields, using all available data and adjusted for location-to-location and year-to-year variation, are presented in Table 1; in addition, the distribution of that production during the growing season, and disease and uniformity ratings, have been tabulated. In Table 2 are presented the yields for 1963 and 1964 obtained at each of the five locations. For more detailed descriptions and information on management, see Bulletin 373.

The varieties generally were harvested when growth reached a height not greater than 30 inches, down to a stubble of 6 to 8 inches. Occasionally, harvesting was delayed after growth reached 30 inches in height; in such cases, yields are higher and fewer harvests were made during the season. At some locations, all varieties were cut at the same time; at a few others, each variety was cut individually whenever it reached the desired stage of growth.

Since yield alone is not the only consideration in selecting a variety, a number of other factors were evaluated in selecting the varieties of summer annual grasses to be recommended by the University of Tennessee for grazing or green-chopping. These considerations included the following: 1) the variety had been tested under at least five different environments extending over at least a 2-year period; 2) the total dry matter yield was larger than 3.25 tons per acre per year; 3) more than 22 percent of the yearly production occurred after September 1 and more than 45 percent occurred after August 1; 4) disease incidence was low (less than 2.5 with scale used); 5) uniformity was high (more than 3.5 with scale used); 6) leafiness was high; and 7) seed was expected to be available to growers. The varieties meeting the majority of these criteria have been starred in Table 1.

Table 1. SUDANGRASSES, SUDANGRASS-SORGHUM HYBRIDS AND MILLETS: Summary of yield, cumulative seasonal distribution of production, and disease and uniformity ratings, of varieties and hybrids at five locations in Tennessee, 1955-1964.

	Variety or Strain (Listed alphabetically)	Number of experiments	Adjusted average* yield (T/A)	Cumulative distribution of production (percent)					Disease rating[1]	Uniformity rating[2]
				Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1		
SUDANGRASSES AND HYBRIDS:										
+	Advance 1038GE	3	3.71	14	86	45	19	5	3.5	3.5
+	1071F	2	3.78	24	76	43	21	1	1.0	3.3
+	6309E	2	3.67	26	74	37	18	1	1.5	4.5
+	Asgrow Beefbuilder T	2	4.17	28	72	35	18	3	2.5	5.0
+	Duet	3	3.78	13	87	42	25	1	2.0	4.7
**	Grazer A	8	4.51	25	75	47	32	7	2.0	3.5
+	Titan R	3	3.79	12	88	41	23	2	3.0	4.5
+	Caladino Greenlan	4	4.26	20	80	46	22	4	2.5	4.0
	Common sudangrass	10	3.37	22	78	42	15	7	—	—
+	Crown Su-Sorg	3	4.27	18	82	49	20	6	3.0	3.0
**	DeKalb Sudax SX-11	21	4.34	20	80	47	24	6	3.3	4.0
+	Sudax SX-12	5	4.75	21	79	50	25	13	2.5	5.0
+	Dorman Sure-Graze	3	3.99	15	85	50	19	4	2.0	5.0
+	Excel Grazer	2	4.37	25	75	47	17	3	3.5	3.5
	Frontier Hi-dan 37	13	4.07	23	77	46	27	6	1.3	3.0
**	Hi-dan 38	11	4.15	21	79	45	24	7	1.0	3.8
	S-212	4	3.50	17	83	39	19	2	—	—
	Georgia 337	16	3.20	16	84	54	24	10	—	—
**	Green Bros. Green Graze	9	4.41	24	76	49	30	8	1.6	3.9
	Greenleaf	37	3.09	17	83	51	23	7	1.3	4.8
+	Hunt & Tipps Green-M	5	3.96	22	78	47	21	10	2.0	3.5
+	Ho-K	3	3.57	22	78	46	22	1	1.5	3.5

Table 1.—(Continued)

	Variety or Strain (Listed alphabetically)	Number of experiments	Adjusted average* yield (T/A)	Cumulative distribution of production (percent)					Disease rating[1]	Uniformity rating[2]
				Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1		
	Lahoma	10	2.52	25	75	38	12	6	—	—
**	Lindsey 77F	8	4.36	20	80	47	24	10	2.0	3.5
+	92F	4	3.11	24	76	38	20	7	—	—
+	101F	4	3.80	20	80	43	22	4	—	—
+	Nebraska Su-1	4	3.93	30	70	41	30	1	1.0	4.0
**	Northrup-King Sordan	9	3.95	26	74	46	26	7	1.1	3.2
**	Trudan 1	9	3.35	26	74	46	26	6	2.2	3.0
+	Paymaster Aztec	2	3.63	31	69	43	19	3	2.5	4.2
+	Crop Guard	2	3.68	20	80	39	15	4	1.5	4.3
**	Sweet Sioux	13	4.29	25	75	46	26	7	1.7	3.6
	3 Little Indians	9	3.88	20	80	48	25	9	2.0	1.7
+	Pfister Si-Chow 1	3	3.38	13	87	35	22	2	1.0	4.5
+	Si-Chow 2	2	3.20	30	70	43	19	2	1.0	4.9
**	Su-Chow 34	12	4.93	24	76	49	27	7	2.0	4.0
**	Su-Chow 35	13	4.40	21	79	49	28	6	2.5	4.2
**	Piper	38	3.18	22	78	45	19	5	2.9	4.6
	Piper x **S. propinquum**	18	3.89	30	70	40	21	6	3.0	4.0
	Rhodesian x Stoneville synthetic	8	4.44	16	84	49	33	5	0.0	4.0
+	Riley Ga-Su	3	3.84	19	81	48	21	4	3.5	2.5
+	Hy-Su	3	4.28	15	85	44	19	3	4.0	3.0
+	Su-Graze	3	4.10	24	76	50	23	1	3.5	3.5
**	Rudy-Patrick Mor-Su	9	4.20	26	74	47	27	7	2.0	3.2
+	Su-1	5	3.89	19	81	54	28	12	2.0	3.6
	Stoneville selection	15	2.62	14	86	58	30	9	—	—
	Stoneville synthetic 1	15	3.08	14	86	59	30	10	—	—

Table 1.—(Continued)

Variety or Strain (Listed alphabetically)	Number of experiments	Adjusted average* yield (T/A)	Cumulative distribution of production (percent)					Disease rating[1]	Uniformity rating[2]
			Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1		
** Suhi-1	16	4.13	16	84	52	30	8	1.5	4.5
Sweet common sudangrass	6	2.84	27	73	36	9	3	—	—
Sweet 372	6	2.84	27	73	33	9	3	—	—
Sweet 372 (S-1)	17	2.15	23	77	36	10	3	—	—
+ Taylor-Evans Grazemaster	3	4.21	23	77	49	20	1	2.5	4.0
** Haygrazer	9	4.31	23	77	48	28	7	2.8	4.0
+ Tennessee Co-op Exp. No. 1	3	3.64	20	80	37	24	2	1.0	3.5
+ Tennessee Co-op Exp. GHS-1	4	4.32	24	76	57	33	12	3.5	3.7
Tennessee Synthetic 1 sudangrass	35	3.58	20	80	51	25	7	3.5	4.0
+ R. G. Young Kow Kandy	2	4.14	20	80	48	20	2	2.5	3.5
MILLETS:									
** Gahi-1 pearlmillet	38	4.58	16	84	51	26	8	0.5	5.0
Gahi-2 pearlmillet	8	4.18	20	80	42	25	5	0.5	4.5
German millet	6	0.92	36	64	12	6	0	—	—
Hybrid SJ	10	3.60	15	85	49	18	1	—	—
Selection 7 pearlmillet	20	3.28	23	77	40	12	2	—	—
** Starr pearlmillet	37	3.46	15	85	48	22	5	0.0	5.0

* Adjusted variety average = $\frac{\text{Variety total for years grown}}{\text{Base total for same years}}$ X All years base average.

**Recommended varieties.

+Insufficient information for recommendation.

Base average based on performance of Piper and Greenleaf Sudangresses and Starr and Gahi-1 pearlmillets.

[1] 0 = no disease 5 = most disease

[2] 5 = most uniform 1 = least uniform

Table 2. SUDANGRASSES, SUDANGRASS-SORGHUM HYBRIDS AND MILLETS: Dry matter production (Tons per acre) and number of harvests at five locations in Tennessee, 1963-1964.

Variety or Strain (listed alphabetically)	Springfield[1]		Knoxville[2]		Spring Hill[3]		Crossville[4]	Jackson[5]	
	1963	1964	1963	1964	1963	1964	1964	1963	1964
Number of harvests	4	4	5 to 7	5 to 7	4	4	4 to 6	5	7
SUDANGRASSES AND HYBRIDS:									
Advance 1038GE	—	—	—	2.62	—	—	3.12	—	2.19
1071F	—	—	—	3.48	—	2.60	—	—	—
6309E	—	—	—	2.91	—	3.00	—	—	—
Asgrow Beefbuilder T	—	—	—	3.40	—	3.31	—	—	—
Duet	—	—	—	3.11	—	—	2.87	—	2.10
Grazer A	6.07	4.58	2.45	3.36	—	4.21	3.60	3.82	2.63
Titan R	—	—	—	3.01	—	—	3.11	—	1.98
Caladino Greenlan	—	—	—	3.60	—	3.71	3.48	—	2.33
Crown Su-Sorg	—	—	—	3.31	—	—	3.14	—	2.67
DeKalb Sudax SX-11	6.12	3.75	2.26	3.14	3.64	4.04	3.57	3.86	2.50
Sudax SX-12	—	4.78	—	3.54	—	4.22	3.86	—	2.37
Dorman Sure-Graze	—	—	—	2.95	—	—	3.18	—	2.40
Excel Grazer	—	—	—	3.16	—	—	—	—	2.48
Frontier Hi-dan 37	5.51	4.16	2.08	2.84	4.63	3.87	3.19	3.56	2.13
Hi-dan 38	—	4.13	2.22	3.19	—	3.80	3.31	3.64	2.60
Green Bros. Green Graze	6.58	4.86	2.70	3.14	3.73	3.75	3.37	3.74	2.58
Greenleaf	4.71	2.61	1.86	2.27	3.17	3.00	—	2.85	2.09

Table 2.—(Continued)

Variety or Strain (listed adphabetically)	Springfield[1] 1963	Springfield[1] 1964	Knoxville[2] 1963	Knoxville[2] 1964	Spring Hill[3] 1963	Spring Hill[3] 1964	Crossville[4] 1964	Jackson[5] 1963	Jackson[5] 1964
Number of harvests	4	4	5 to 7	5 to 7	4	4	4 to 6	5	7
Hunt & Tipps Green-M	—	4.12	—	3.07	—	2.62	3.38	—	2.44
Ho-K	—	—	—	2.88	—	3.05	—	—	2.04
Lindsey 77F	—	4.79	—	2.95	—	—	3.54	—	2.30
Nebraska Su-1	6.13	—	1.96	—	3.48	—	—	3.59	—
Northrup-King Sordan	4.45	3.80	2.22	3.26	4.20	3.77	3.40	3.64	2.11
Trudan 1	3.37	3.38	1.56	2.75	3.80	3.21	2.84	3.15	2.13
Paymaster Aztec	—	—	—	3.04	—	2.81	—	—	—
Crop Guard	—	—	—	3.10	—	—	—	—	1.65
Sweet Sioux	6.07	4.69	2.42	3.50	4.66	3.84	3.54	3.28	2.19
3 Little Indians	—	3.64	—	2.69	—	3.20	3.22	—	2.06
Pfister Si-Chow 1	—	—	—	2.58	—	—	3.02	—	1.63
Si-Chow 2	—	—	—	2.42	—	2.74	—	—	—
Su-Chow 34	—	4.66	2.58	3.18	4.59	4.03	3.51	3.54	2.38
Su-Chow 35	6.32	4.97	2.20	2.99	3.87	3.96	3.44	3.55	2.44
Piper	3.32	2.78	1.58	1.94	3.81	3.74	2.18	2.91	2.03
Piper x **S. propinquum**	4.49	3.51	1.76	2.56	3.36	2.80	—	2.74	2.21
Rhodesian x Stoneville synthetic	7.19	—	2.67	—	3.94	—	—	3.73	—
Riley Ga-Su	—	—	—	2.71	—	3.43	3.29	—	—
Hy-Su	—	—	—	3.27	—	—	3.52	—	2.34
Su-Graze	—	—	—	2.96	—	3.76	—	—	2.44
Rudy-Patrick Mor-Su	5.10	4.69	2.36	3.08	4.07	3.91	3.27	3.79	2.50
Su-1	—	4.08	—	2.54	—	3.22	3.39	—	2.14

Table 2.—(Continued)

Variety or Strain (listed adphabetically)	Springfield[1] 1963	Springfield[1] 1964	Knoxville[2] 1963	Knoxville[2] 1964	Spring Hill[3] 1963	Spring Hill[3] 1964	Crossville[4] 1964	Jackson[5] 1963	Jackson[5] 1964
Number of harvests	4	4	5 to 7	5 to 7	4	4	4 to 6	5	7
Suhi-1	5.71	3.98	2.41	3.01	3.47	3.65	—	2.88	2.70
Taylor-Evans Grazemaster	—	—	—	3.22	—	3.79	—	—	2.40
Haygrazer	6.48	4.31	2.55	3.11	3.96	3.56	3.34	3.65	2.68
Tennessee Co-op Exp. No. 1	—	—	—	2.97	—	2.89	3.08	—	—
Tennessee Co-op Exp. GHS-1	—	4.42	—	2.99	—	3.37	—	—	2.64
Tennessee Synthetic 1 sudangrass	5.49	3.63	2.06	2.68	4.33	3.59	2.85	3.20	2.21
R. G. Young Kow Kandy	—	—	—	3.03	—	—	—	—	2.31
MILLETS:									
Gahi-1 pearlmillet	6.37	4.38	2.60	3.10	3.98	3.78	4.33	3.50	2.60
Gahi-2 pearlmillet	5.83	3.88	2.64	2.86	3.80	4.08	—	3.47	3.01
Starr pearlmillet	5.23	2.64	2.07	2.20	3.28	2.92	—	3.58	2.16
L.S.D. (.05)	0.62	0.54	N.S.	0.59	0.41	0.40	0.50	0.54	0.38
C.V. %	8.0	7.9	—	17.5	7.5	8.6	13.2	13.8	14.4

N.S. = not significantly different at .05 level probability.
[1]Dickson silt loam, (2% to 5% slopes)
[2]Huntington and Sequatchie silt loams, (0% to 2% slopes).
[3]Maury silt loam, (0% to 2% slopes).
[4]Hartsells loam, (2% to 5% slopes).
[5]Memphis silt loam, (0% to 2% slopes).

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